



AUG.

25¢

(This color shot is the Scarecrow
from *Wizard of Oz*—SEE
"HOLLYWOOD COLOR PROBLEMS")



"JOY OF LIFE", by Kalman Szollosy. Zeiss Super Ikonta 2¼ x 2¼", Agfa Super Plenachrome film, 1/100th second at f8. See the article "Summer Snapshots", page 13.



Put a silver lining in YOUR clouds!

THE strange and fascinating beauty of pictures taken on *Agfa Infra-Red Film* has made this unusual medium popular with all types of photographers.

Infra-Red gives you creamy-white cloud formations against dark sky-tones of rich, dramatic quality.

Infra-Red also provides startling night effects in pictures made in broad daylight,

minimizes haze in long-distance shots, and renders foliage in a ghostly lightness that cannot be obtained any other way.

Agfa Infra-Red is exceptionally fine-grained and brilliant with a high sensitization for infra-red rays.

• • •

Made by Agfa Ansco Corporation in Binghamton, New York, U. S. A.

AGFA **INFRA-RED** **FILM**
35 mm.

Agfa

CONTENTS

Vol. 2 No. 12
AUGUST, 1939

**MINICAM
MONTHLY**
WILL LANE, Editor

COVER

Straw Man from "Wizard of Oz"—By *Eric Carpenter*

ARTICLES

How to Take Summer Snapshots— By <i>Henry Clay Gipson</i>	13
Cut It Out—By <i>Alexander King</i>	18
How to Use Your Camera Eye—By <i>Leo Nejelski</i> ..	22
Royalty Before the Lens—By <i>John Hutchins</i> ...	26
Photography by Invisible Light— By <i>John N. Harman, Jr.</i>	28
Paradox of a Distortionist—By <i>Arthur Browning</i>	36
Into the Sun—By <i>B. G. Silberstein</i>	44
How to Film Nature—By <i>Lynwood M. Chace</i> ..	48
MINICAM Print Contest Winners.....	58
Portraiture—By <i>J. Ghislain Lootens</i>	68

DEPARTMENTS

In Focus	4
Superpan Panning	9
Behind the News Camera.....	11
Being Critical	67
Pictorial Analysis	68
Camera Quiz	76
Contest Calendar	79
Salons to Enter.....	83
Photography Trade News.....	88
Book Reviews	97
Build It Yourself.....	98

5-MINUTE FEATURES

Photo Finish	25
Photographic Fallacies	34
Behind the Lines.....	42
Fire Alarm for Lensmen.....	54
Hour for Lunch.....	56
Roads to \$\$\$	64
Photographic Blessed Event.....	74

CINECAM

Hollywood Color Problems— By <i>John Arnold, A. S. C.</i>	109
Paper Clip Editing.....	112

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"More Data"

Sirs:

I heartily agree with Pat Raymond ("In Focus" July, p. 4) that many advertisers are too vague.

Almost without exception, filters and mounts are stated as fitting lens mounts of "32 mm." or other metric size. I have several cameras but I do not know the "mm." size of the lens mounts.

Why not state the inch size, along with the metric size in every case where metric sizes are given?

GUY M. CHASE.

Elizabeth, N. J.

(MINICAM's thanks and \$5 go to *minijon Chase* for his constructive suggestion. Additional letters on the subject of photographic advertising follow. Incidentally, one inch equals 25.4 mm. One mm. equals 3/64th or .039 inch.)—ED.

"More Details"

Sirs:

I wish that advertisers would state more of the important details of their products; they seem to be aping automobile ads, which studiously arouse a reader's curiosity by omitting vital information, hoping to receive a call from the prospect and that he may come under the influence of high pressure salesmanship. Numerous advertisements of 35 mm. cameras, for example, fail to state the size of negative made, and to many potential camera

CANDID CAMERA gave you **PERFEX FORTY-FOUR**—NOW GIVES YOU



Candid Camera Corp. of America, manufacturers of the famous Perfex forty-four Camera—now give you its companion in this revolutionary unit for the viewing and projecting of all 2x2 inch slides.

The NEW *perfex* VU or PROJECT COMBINATION FILM SLIDE VIEWER AND PROJECTOR



\$ **25⁰⁰**

**COMPLETE UNIT TO
VU or PROJECT....**

Now, with one unit you can view or project your film slides, color positives, etc. As a viewer it gives you a brilliant sparkling image, six inches wide on a ground glass viewing screen. As a projector it gives you a perfect life like screen image 5 ft. wide at a 7½ foot distance from machine to screen. Instantly convertible for viewing or projecting.

BRINGS OUT THE FULL BEAUTY OF YOUR SLIDES

The Perfex VU or PROJECT will bring out in sparkling detail the full beauty of your 2x2 inch film slides, color positives, etc.—as a viewer for a limited audience—as a projector for a large audience. Among its unusual features are automatic slide alignment and ejection, high ratio lever focusing—cool operation. Its high efficiency light and optical system make it tops in entertainment

SEE IT AT YOUR DEALER

PRICE **\$25⁰⁰**
ONLY.....

LITERATURE ON REQUEST



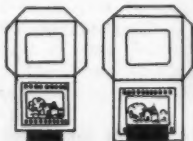
AS A VIEWER

Ground glass viewing screen measures 6x6 inches—gives a six inch image on both vertical or horizontal slides. Automatic shutter blacks out screen, eliminating the distracting flash of light between slides. Shows a brilliant picture, ample in size for easy viewing.



AS A PROJECTOR

Instantly convertible for use as a projector. Scientifically designed optical and condenser light system provide a 5 foot image size at a 7½ foot throw from machine to screen. New simplified slide feeding device—automatic changeover and ejection. Pictures are life like—full of detail.



PERFEX 1-2-3 SPEED SLIDE BINDER

A revolutionary development—reduces slide making to three simple operations. All one piece, complete with glass. Extremely simple. Gummed tab holds film over mask opening. Folding and sealing complete the slide. Reduces the work of minutes to seconds.

Per Dozen50c



**ALL
PERFEX
PRODUCTS
ARE SOLD
UNDER
FAIR
TRADES**

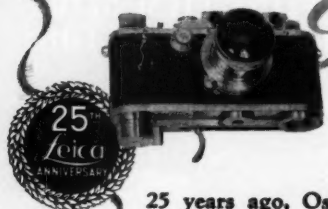
CANDID CAMERA CORP. of AMERICA

844 W. ADAMS STREET

CHICAGO, ILL. 90118

Eastern Distributor: RAYGRAM CORP., 425—4th Avenue, New York City

25 YEARS OF LEICA PROGRESS



25 years ago, Oskar Barnack created the first Leica camera . . the first modern miniature . .

first to employ 35mm film and make double frame pictures . . first to introduce the principle of range finder directly coupled to the lens . . first miniature camera to have interchangeable lenses . . first to combine the winding of the shutter and transporting of film in one operation . . first to introduce the principle of a universal camera applicable to many fields of photography.

Basic soundness in design is attested by the fact that the original shape is retained in the latest model of the Leica camera. Basic precision construction has raised Leica to the height of a criterion. Leica is the product of the Leitz Microscope Works, and it is constructed within the same tolerances as a microscope. Such mechanical and optical quality assure continued exacting results.

See Leica . . and you'll know why Leica helped turn an occasional pastime into an international hobby.

There is only one Leica, but there are many Leica models from which to choose. More than five hundred accessories adapt the single Leica to all fields of photography. Illustrated is the Leica Model 111b, with Summar f:2 lens and Rapid Winder. Your dealer will gladly explain the Leica Time Payment Plan.

Write for FREE catalogs, Dept. B-8.

E. LEITZ, INC.

730 FIFTH AVENUE, NEW YORK CITY

buyers "35 mm." is Greek. Many ads name the lens aperture, but do not state whether anastigmat, or the name of lens maker.

Many advertisements omit prices, and in such cases the inference is that the price is high and if named would deter buyers. I order camera supplies direct from advertisements—when all needed information is given—but not if I have to wait ten days for a reply across the continent.

W. H. WILCOX.

Tacoma, Wash.

"More Forthright"

Sirs:

I suggest that advertisers be a little more forthright, i. e., Monobath (I think it's swell) states that you can throw away your clock and thermometer. Two beautiful cases of reticulation proved to us that a thermometer was quite necessary to check hypo temperature and make sure it was same as developer. A minimum time also is necessary.

As a tip to those who use an adjustable tank for 120 film we find that a reverse bend on the end of the film just before loading the reel will save a lot of cussing and keep the negatives from jumping off the reel while loading.

Our ultimate goal is to hit the Salons and we would appreciate more direct information on them.

DWIGHT C. MAMBLY.

Newport, R. I.

"Will It Work?"

Sirs:

I really agree with Pat Raymond, and his letter in the July issue. What we minifans want to know is "will it work" not a long article on how it is supposed to work.

Why not have a MINICAM "Seal of Acceptance" for advertisements that don't make untrue statements or charge too much for a product. This seal would remove some of the darkness from the eyes of us minifans. Most advertisements are apt to be prejudiced and do not quite tell all the facts. Also some of the products ask too much money. A service like this would be greatly appreciated by all MINICAM readers.

DICK MARSH.

Tulsa, Okla.

More Straight Dope

Sirs:

Every payday, I wander over to the photo store (I go to the one who treats me best, that is, is most courteous, patient, and does not use too much sales pressure) to buy at least a couple of rolls of #120 for my Rollei-cord and a pound of hypo. But, that is usually just the beginning. From there I go on: To see what's new, or what I need.

I try most anything once. But like a lot

of other fans, I try things in what I call my "laboratory." And in the "Lab," sales talk means nothing. I know from experience for instance, that most of these widely advertised developers *LOSE* emulsion speed regardless of all their claims to the contrary.

So, my point is simple: What I want are the facts. Most ads overstate the case and must be discounted. Just the same, I read them, of course, but when I talk things over with Club friends and others, I pan the hell out of things I find to be poor.

Right now, for instance, I am looking for a good dryer. I have my eye on something at \$18.95. Yet, in the ads and even in the circulars is *no straight dope* on what the dryer will do, what it is made of, and all the EXACT DETAILS about it. Let advertisers take it for granted they are talking to intelligent buyers, and cut down on the Fourth of July language.

Take the lenses of cameras. I don't expect Zeiss Tessars in \$25 cameras, but since the lens is most important, some name besides "Zwinkle" or "Fully Corrected Stigmat" could be used.

Even some big, reliable companies are stingy on facts. For instance, I phoned Weston to find out whether the photo-electric cell in the \$15.50 meter is the same as in the De-Luxe (this was before the MASTER came out) and the answer was pretty vague. Or, take this Stereo-Tach,—I *might* get interested if they told me how it works, instead of how wonderful it is.

A final peeve: *I don't like ads which are printed in smaller type than the type of the magazine itself.* You magazine editors know a good reading type and use it. Only a dumb advertiser would use a smaller type. Nuff said.

FRANK ROBBINS.

New York City.

For the last word, see page 114.—Ed.

"Photo Paper Chart"

Sirs:

Many amateurs and, I believe, professionals would like to have a chart on which all photographic papers are attached, giving a few necessary comments on uses, texture, and the type of work best suited for each.

The chart would be something similar to present day paint charts.

FRANK REGEK.

Fort Knox, Ky.

Centering Viewfinder

Sirs:

I had some difficulty in finding the center of my picture with my Argus, Model AF, Viewfinder—so I simply attached two hairline strips of adhesive tape about 1/16" wide criss-



FRANK JANOCHA, JR.

35
mm

AS YOUR EYE SEES IT

Used with a yellow filter, the color sensitivity of Superior Pan corresponds closely to that of the human eye. When using heavier filters, for which the correct exposure is difficult to determine, Superior Pan has the speed and wide latitude that brings up your score of "good shots". Focus a frame in your enlarger and you'll see the long scale gradation and fine grain size needed to make a beautiful print. Next time try a roll of this "all-purpose" film . . . Du Pont Superior Pan.



80° F. (or more)--- and agitate

... is our recommendation for Champlin Formula 16. Giving the best results at the higher temps, Champlin 16 is the ideal "summer weather" developer. One of the simplest fine grain developers to use — consistently giving finest tone quality, finest grain and highest emulsion speed. Non-poisonous and non-staining. *And don't forget to agitate.* By the makers of Champlin Formula 15.

Send for latest bulletin on using Champlin 16.

CHAMPLIN FORMULA 16

The standard by which others are compared.



Make your own Color Prints with CHAMPLINCOLOR

The simplest, most inexpensive and best method known. Send for booklet giving complete details and instructions.

Complete set (400 to 500 four-color prints) \$12.50

CHAMPLINCOLOR

The most inexpensive Natural Color process on the market today.

CHEMICAL SUPPLY COMPANY
HOLLYWOOD CALIFORNIA

cross on the front of same, and it has proved very satisfactory.

J. A. REEVE.

Port Jefferson, N. Y.

Ideal Miniature?

Sirs:

We are inviting all amateur photographers to submit a letter of not over 100 words telling us what, in their opinion, constitutes the ideal type of miniature camera. What features it should have regarding picture size, type of shutter, etc. The Contest will close on September 15th, and prizes will be awarded mainly on originality of ideas.

The five prizes to be awarded are as follows:

First prize: Perflex Forty-four camera with f/2.8 lens, flash gun, eveready carrying case, and a set of five filters.

Second prize: Perflex Forty-four camera with f/3.5 lens, flash gun.

Third, fourth, and fifth prizes: Perflex Forty-four cameras with f/3.5 lenses.

CANDID CAMERA CORP.

Chicago, Ill.

Carrying Strap

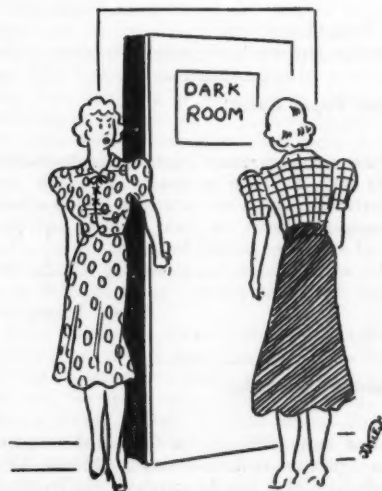
Sirs:

Having bought a camera recently, I wanted a carrying strap, but was unable to buy one because of the price. I thought of one which could be made for about fifteen cents and be good looking and durable.

It can be made by getting a beaded wash-basin chain and a basin chain stay with a ring in it. The chain stay, having the same size threads as the tripod socket, can be put in securely, with the chain running through the ring.

LAWRENCE W. ALLEN.

Canoga Park, Calif.



"All that fool wanted to do was develop pictures!"

Superman PANNING

WHAT NEXT IN NAMES? It worries us no end to contemplate the predicament of the poor film mfgers when they next have to name a new faster film now that they have pretty well used up all the supers, pluses, double X's and assorted superlatives.

TSK, TSK: We wonder what has happened to the husband who told his wife he paid \$15 for his \$185 minicam now that she has taken up the hobby and has become a catalog memorizer?

YOU SAY THE NICEST THINGS DEPT.: "Why your portraits are just as good as the ones they make downtown!"

CRYING NEEDS: Some way to make prints stay flat easily, some automatic way to

wash prints with thorough agitation, something better than test strips for use without slide rules, comptometers, and logarithms.

WHAT'S THIS about some nudes looking naked?—or have I been missing something?

THEY TELL US: Camera store clerks say the most common introductory remarks when trading in the folding autographic model 1906 is, "It always takes good, clear pictures."

IT AIN'T SO: Despite what you may think, box cameras do NOT have good lenses. If you took better pictures with that old black box than you do now with your Super Everything (Model IIIp) maybe it's you (?)

CAMERA CLUB QUIP OF THE MONTH: After a rather pathetic 8x10 horizontal was put on the easel for criticism and nothing was forthcoming, the chairman asked, "Any criticism? Maybe a little trimming?" From the back of the room came, "Yeah, about nine inches off the bottom."

HAVE YOU TRIED debates at your camera club meetings? Suggested topics: Borax vs. paraphenylene-diamine developers, horizontal vs. vertical enlargers, Leica vs. Contax, 8mm. vs. 16mm., Pictorialism vs. Realism, Reflex vs. Twin-lens, Mini vs. Mega-cams.

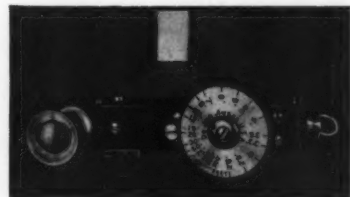
IT'S ALWAYS SOMETHING: In the summer the tap water for washing is about

NEW! The New and Improved Ultra-Sensitive DeJUR-AMSCO PHOTO-ELECTRIC EXPOSURE METER

... at no increase in price! **\$10.50**

Complete with Sling and Genuine
Pigskin Leather Zipper Carrying Case

- ★ Special alloy steel magnet, making for an accurate, smooth and ultra-sensitive meter movement.
- ★ Zero adjusting screw for permanent zero standardization.
- ★ Weston film ratings. Weston patent licenses; 20 combinations of "f" stops.
- ★ Ideal for color work; movie readings taken directly from face of meter... Use both indoor and outdoor.



DeJur-Amsco Exposure Meters and Range Finders are made in America for all the world. Ask for them at your dealer, or write for information. Dept. M-9.



NEW! More Light ... Better Sight ... Better Pictures with the Brand New Precision-Made DeJUR-AMSCO SUPERIMPOSED IMAGE RANGE FINDER

\$5.50

Complete with Sling and Genuine Leather Carrying Case

- ★ More compact interior construction, permitting more light to enter, providing greater visibility.
- ★ Extending viewing eyepiece enables rapid centering and reading of images; range scale from 7' 6" to infinity.
- ★ Even focusing by micrometer ball-bearing adjuster; deep etched dial markings.
- ★ Top-grade reflecting and viewing mirrors, made by same process as used in famous 200-inch observatory telescope.

... plus many other features that make the DeJur-Amsco Range Finder the simplest, easiest, most practical instrument of its kind.

DeJUR-AMSCO CORPORATION Shelton, Connecticut

FOTH DERBY



An Outstanding Value In The Miniature Field

THERE are several reasons why this precision-made camera, of which there are already about 75,000 in use in the U. S. A., is constantly becoming more and more popular among minicam enthusiasts.

First, it is amazingly compact and light.

Second, its lens equipment, f/3.5 or f/2.5, is fast enough to produce excellent results even in poor light. The extremely short focal length (2") permits a considerable degree of latitude in focus, eliminating "out-of-focus" effects.

Third, the Foth Derby is equipped with a modern type delayed-action focal plane shutter, with six speeds, from 1/25 to 1/500 second, and bulb and time. The motion arresting power of this shutter enables one to "freeze" action. The delayed-action feature permits the operator to join the group he is photographing.

Fourth, the large tube view finder makes it easy to sight the subject and shows the picture in clear detail.

Fifth, the Foth Derby is very easy to load, covered with genuine leather, equipped with a standard tripod socket, finger and cable shutter releases.

Sixth, the Foth Derby is priced far below most cameras having comparable features.

Green and dark red windows permit the use of either panchromatic or orthochromatic film.

With 2" Foth Anastigmat f/3.5 lens... **\$21.50**

With 2" Foth Anastigmat f/2.5 lens... **27.50**

In view of the fact that the camera will focus to less than 3/4 feet, no supplementary lens equipment is needed.

If your dealer cannot supply full information, write Dept. 38-C.

BURLEIGH BROOKS
INCORPORATED

127 WEST 42ND STREET NEW YORK

the right temperature and the developers are too hot, and in the winter the developers are about right at room temperature and the tap water is too cold.

RUMOR: "Acceptance of nudes in the salons is on the wane." Well, it was a little draughty for the little woman, anyway.

ACROSS THE COUNTER: Being Sunday one of the local boys asked the corner druggist for some of the new fast film only to be peevishly informed that it really wasn't any different than the regular old pan film but was just a stunt put on by the mfgers to sell their product. (Correct answer: "Oh!")

MOST COMMON ENLARGER WEAKNESS: Failure to give flat light coverage.

MOST COMMON PRINT FAULT: Under-printed corners.

FREE SPEECH: The fellows who write the captions for the "art" books certainly know no restraint—"This print is a fine example of how the torso may be treated."

FOR THE INTELLIGENTSIA: "A portrait, like other pictures, consists of masses and the lines that enclose or connect them." (Like at the fires?)

TUT-TUT DEPT.: "Remember that the mental reaction of your model will be reflected in your pictures, and that any restraint on the part of your model will be manifest in the final result."

WHAT HAS BECOME OF dynamic symmetry? We haven't heard or read anything of it for some time. Maybe Congress is working on some new laws.

OUT OF TITLES? One little stunt you may have overlooked in your recent mad searchings for titles is going back over the ones you have already used. In case you have forgotten some of them, may we refresh your memory? Here they are: Dawn-Innocence-Curves-Reflections-Adoration-His Royal Highness.

POET LOVER'S CORNER:

There was a young man from Phidden
Who photographed whenever bidden.
When asked for the reason
He replied it was treason
To keep such talent as his'n hidden.

ALL THE VERBALIZING we've been hearing about film development brings to mind "My, what a big mouth you have, Gamma!"

J. H. Sammis.

Behind the NEWS CAMERA

By A. J. EZICKSON

INCLINATIONS of the news photographers toward cameras smaller than the conventional 4x5 inch Speed Graphic are evident these days: Gene Badger, veteran Syracuse, N. Y. Post-Standard camera ace, does all his work now with a 3¼x4¼ Speed Graphic for spot news, and the 2¼x2¼ Super Ikonta B for features and pictorials. Mary Morris, Associated Press staffer, is doing all her news work with the 3¼x4¼ Speed Graphic. Quite a difference from the old time 5x7 plate cameras and 4x6 Icas which the press used to lug around.

The New York News' cameramen get a chance to do more aerial work than any of the other Manhattan picture gatherers. The Daily News has its own two Waco planes at Roosevelt Field, Long Island, ever ready for instant action. When a story breaks, the pilots, George Wies and Duke Crantz, are told to fly their ships at once to Holmes Airport at Jackson Heights, which is nearer the city, and await the arrival there of the cameramen. Fairchild Aerial cameras are used on these flying news trips.

A great step forward for the official recognition of the news photographer: Governor Herbert Lehman of New York recently approved the Murray bill amending the penal law by making it a third degree assault to strike, beat or injure wilfully the person or camera of a newspaper photographer when the photographer is taking pictures in a public place or gathering.

A boon to the newscamera users of Leica and similar 35 mm. miniature cameras who prefer film lengths shorter than the 36-exposure load, should be the new 20-exposure Agfa film cartridge that has just been intro-



"See How Much Brighter This Screen Makes It!"

Your pictures on a Da-Lite Glass-Beaded Screen have amazing realism. The superior light reflective qualities of this screen, with its millions of tiny glass beads, sharpen details and give new brilliance to color and black and white film. The Da-Lite Glass-Beaded Screen is the result of 30 years of leadership in screen manufacture. Available in many styles including the popular Challenger shown above which can be set up instantly anywhere—the only screen that can be adjusted in height simply by releasing a spring lock and lifting the extension rod. 12 sizes from \$12.50* up. Other styles as low as \$2.00*. Write for literature and name of nearest dealer.

*Prices slightly higher on Pacific Coast.



Reg. U. S. Pat. Off.

Glass-Beaded
SCREENS

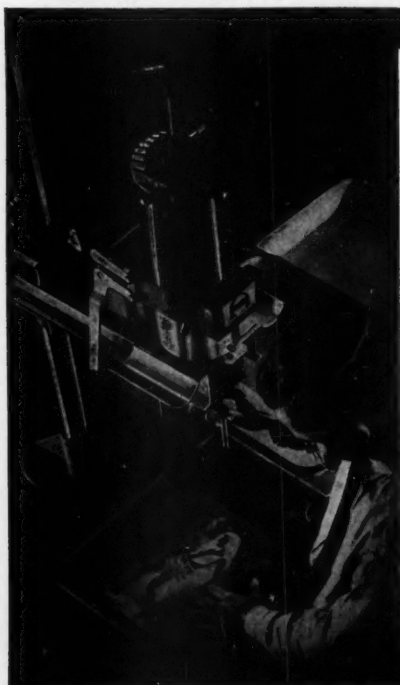
DA-LITE SCREEN CO., Inc.
Dept. 8M, 2723 N. Crawford Ave., Chicago, Ill.

duced. One roll should be ample to cover a news or feature story, will mean a saving of time in coverage, more efficiency in handling in the darkroom for quick results, and, of course, will be less expensive. It is available in five popular types: Fine-Grain Plenachrome, Superpan Supreme, Ultra-Speed Panchromatic, Finopan and Infra-Red.

Merriment, kindly ribbing and seriousness highlighted a London-New York radio hook-up in which American and English news photographers took part. The two-way conversations featured William G. Horton of the *London Times*; Mr. Burch of the London News Service; Walter Bellamy, chief photographer of the *London Daily Express*; Geoffrey Keating of the *London Daily Sketch*; James Sarche of the *Daily Herald*, and W. R. Turner of the *London Daily Mail*. Pat Candido of the *New York News*, Walter Durkin of Associated Press, Henry McAllister of the *New York Journal and American*, and George Alexander of Wide World Photos, represented the fraternity of American lensmen who were amazed to hear that the "lens peekers" of London deem it necessary to carry a "pair of steps" (ladder) around. The main theme of the talk was photographing royalty. The American boys, who seldom get a gander at the titled folk, wanted to know all about the

wearing of formal dress, distances away from the King and Queen, how to approach and address royalty—and the Englishmen told them all. Horton advised that formal attire is sometimes necessary, especially when there are state functions, otherwise just a dark suit suffices. As for distance, he said, they occasionally get within three yards. The English cameramen assured their across-the-water confreres that the King is a very amiable subject, saying: "Why, he is a keen minicam fan himself."

Several other interesting features of American and English news picture work popped up during the conversations. Sarche announced that he has been using only a miniature camera in his news work for the past five years. On his left side he has one with a wide angle lens strapped to him, and on his right side one with a long focus lens, so by using one or the other, he can get either the close-up or the general view. The Americans said their standbys were 4x5 Graphics, although miniatures are used occasionally. The word "scoop" stumped the English lads. Their synonym for it is "exclusive picture." The Americans wanted to know if the English photos take time out for tea during big stories, and Bellamy countered with: "Why tea?", and extended an invitation to the boys to meet him at London's "Pig 'n' Whistle" sometime.



Heatless—Dustless

- In every way the Omega "C" has proved to be the ideal enlarger for the miniature worker. Beautifully constructed of steel and aluminum, Model "C" takes all small size film in the 35 mm. to $3\frac{1}{4} \times 3\frac{1}{4}$ -inch range. Gives brilliant, evenly distributed light . . . spotless prints from clean negatives. Girder-type construction; double condensers; efficient lighting system; Dyna-Thermal (scientifically cooled) ventilating system. Model "C" (illustrated) is an impressive machine—see it at your dealer's—\$97.50. Other Omegas: "A" for 35 mm. film—\$48; "B" for film up to $2\frac{1}{4} \times 2\frac{1}{4}$ inches—\$65; "D" for film up to 4×5 inches—\$175. Prices slightly higher west of Rockies.
- Simmon Automatic Film Drier minimizes grain, eliminates dust, reduces drying time, \$27.50 and \$29.50. Write for folder C.

COMPLETE LINE OF LENSES:

Simmon, Bausch & Lomb Tessars, Dallmeyer.

SIMMON BROS., 37-06 36th St., Long Island City, N.Y.

OMEGA ENLARGERS MADE IN U.S.A.

HOW TO TAKE



UMMER NAPSHOTS

By HENRY CLAY GIPSON

Illustrated by the Author

AUGUST provides unparalleled opportunities to put what has been learned during the past months to the acid test, and to bring home the bacon with new pictures of friends, places, action and pictorial scenes.

How to do this? Before taking more pictures, take a leaf out of the book of your own experience. Go over your prints one by one with a critical eye. Ask how the background, posing, lighting, and expression of each could have been improved.

The modern minicam with its fast lens, highly sensitive film, and speedy shutter seldom says "can't." But difficult subjects become easy ones in August. It is a month not only noted for the number of pictures made, but also for some of the finest results. Fortune, as well as the sun, seems to smile.

There is adequate illumination to try those action shots at 1/200th of a second, or 1/1000th if your camera has it. At the same time, lenses can be stopped down for good definition and maximum depth of focus, when foreground and distant objects should all be sharp.

Before diving into your album and negative file to study previous pictures and see how to improve them, look over the snapshots reproduced on these pages, imagining they are your own. Then read the comments below.

Human interest is an important ingredient in any picture, but an interesting composition may be entirely abstract, as is the snapshot of the banana leaves at the top of the next page. But let's take these one at a time:

(1.)

Lack of a model is no excuse for the lack of a picture when designs like this are present. Nature will supply her own models whether it be in your backyard or in a tropic country. Orthochromatic film gives the most successful results when photographing foliage. Eastman Recomar, Verichrome film, f/22, 1/25.

(2.)

Reflections are best when the water is calm. Water reflects a great deal of light, so fall back on your exposure meter. Use a yellow filter for rich water and sky effects. Eastman Bantam Special camera, f/11, 1/100.

(3.)

Celebrities take vacations, too. Make informal portraits of the people you meet. People prominent in the news are usually gracious about posing. Here are Mr. and Mrs. Frederic March. Speed Graphic, Superpan film, f/11, 1/100.

(4.)

Assemble your pictures. Use your vacation acquaintances as models, add accessories such as the parrot and flowers in this black and white print made from a well-known color picture.

(5.)

Don't make a subject squint into the sun. Diffuse the shadows on the face with a reflector. The reflected light from a white pavement and two whitewashed walls made this a good portrait despite the fact that it was in the tropics at mid-day. Graflex, Superpan film, f/16, 1/30.

(6.)

Frame your picture, if you can, with a dark mass in keeping with the spirit of the picture. Here the gnarled cedar tells the story of the beach it frames. Finding frames for pictures is a challenge to ingenuity. This cedar was insignificant in size—less than five feet high. By stopping the lens down to f/32 both the tree and the landscape were brought into focus, making the tree appear a large and ancient landmark. Speed Graphic, Superpan film, f/32, 1/10.

(7.)

When the background is uninteresting, shoot from a low vantage point. A medium yellow filter darkened the sky, separating it from the girl's slacks. A picture like this is often more effective without clouds. Superpan film, f/11, 1/50.

(8.)

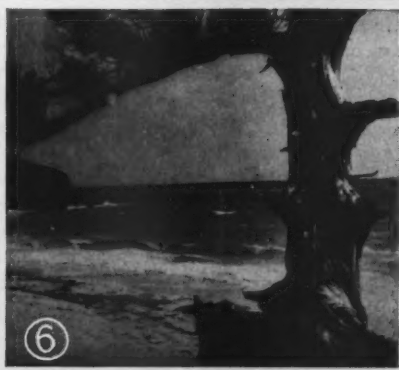
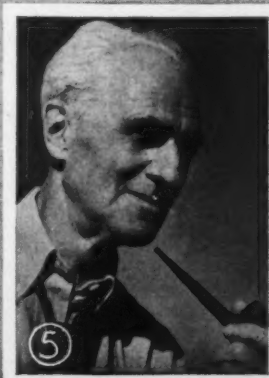
Use a medium yellow filter if you want clouds and a medium grey sky. A medium red filter accentuates the whiteness of the clouds and darkens the sky. f/6.3, 1/25, red filter.

(9.)

Flash shots out of doors at night require ample exposure, for there are no confining walls to reflect the light from the flash. Sunburned skin also requires more exposure. Superpan film, f/6.3, 1/25, one photoflash No. 21.

(10.)

Don't do this. It is neither a fashion picture to show the clothes off to advantage; nor a good shot of the girl, for the pose is too awkward. Before shooting, ask





yourself how the picture will appear to strangers who have no pleasant recollections of the places or persons photographed. K2 filter, $f6.3$, $1/100$.

(11.)

Half the trick in summer photography is knowing how to get the best out of available models. Learn to adapt a model's good points to your pictures. If she has poor features but a good figure, forget portraits and make action shots.

(12.)

Shoot from unusual angles. This was taken on a rocky seashore with the photographer looking down on his subject.

(13.)

For city dwellers even the most commonplace animal adds a vacation flavor to pictures. But avoid "busy" backgrounds such as you see in this picture, for they detract from the center of interest.

(14.)

At the beach, take time to look for the unusual subject. Here a shadow and ripples on the water gave the photographer

a new slant. Superpan film, $f11$, $1/100$.

(15.)

Make pictures at dusk with synchronized flash. Brightly lighted figures are effective against the dark grey sky. Superpan film, $f11$, $1/50$, photoflash No. 21.

(16.)

Afternoon light is best for sailing pictures and the best shots are made near one of the turns in a race where boats bunch close together as they make for the mark. Superpan film, $f5.6$, $1/200$, deep yellow filter.

(17.)

Let children assume natural poses. Talk to them about what they are doing and snap before they realize they are being photographed. Superpan film, $f8$, $1/100$.

(18.)

Don't take your photography so seriously that you miss the humorous pictures. A vacation picture like this will arouse more interest among your friends than many expert achievements. Verichrome film, $f11$, $1/50$.



12



13



14



15



16



17

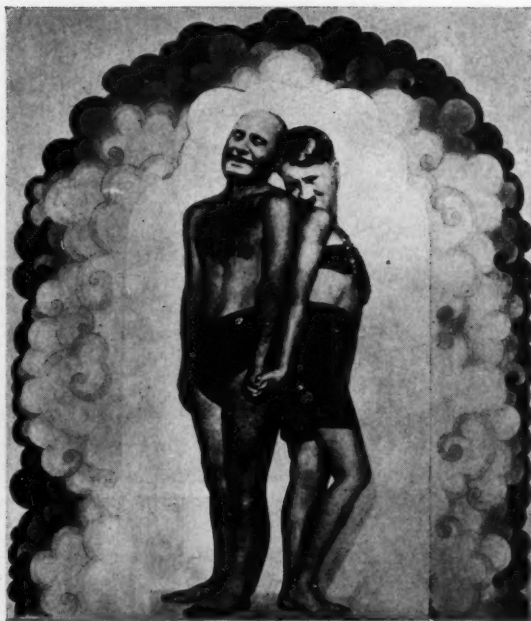


18

CUT IT

By ALEXANDER KING

Illustrations by the Author



EUROPEAN political journals are fond of this type of camera-scissors satire. The heads of Mussolini and Hitler here were pasted on the bodies of a pair of honeymooners clipped out of a newspaper. Fig. 1.

THE beginnings of photomontage are to be found in the early work of artists like Hans Arp, Max Ernst, George Grosz, and in the mustaches which sportive youth was wont to smear on the faces of girls displayed on public billboards. In the Max Ernst collage (Fig. 7) it is obvious that he was interested mostly in painting and very little in photography.

Not to be outdone by the painter's ability to combine in one picture any number of characters and impressions, modern photography has evolved the techniques of *collage* and of *montage*.

A montage is a combination print made photographically. It is derived from double or multiple exposures on one negative or on one sheet of enlarging paper, from several negatives. Thus an accidental double exposure may be called a montage. How to make montages has been described in previous issues. (MINICAM, October, 1938; March, 1938; January, 1938.)

Collage is the French word for *pasteup*. Various pictures or parts of pictures are pasted on one background and the total result then photographed. The illustrations for this article are pasteups or collages.

I should like to analyze at this point why American editors, and even advertising agencies, have been comparatively reluctant to use this perfectly legitimate child of photography. News magazines may well have reason to fear that doctoring of any pictures may cast a doubt on the whole contents of their journals. They assume that their clients, no matter how carefully cautioned, may not be able to distinguish these deliberate pictorial frauds from sometimes

OUT!

For simplicity and versatility, the paste-up process has no peer. A camera and pair of scissors is all that is required.

ANY NUMBER of photographs and any parts of them can be combined in a manner not otherwise possible. Three nude figures here were printed to the desired size, cut out and pasted on an inverted cloudscape. The assembly then is rephotographed. By Pierre Boucher.

Fig. 2.





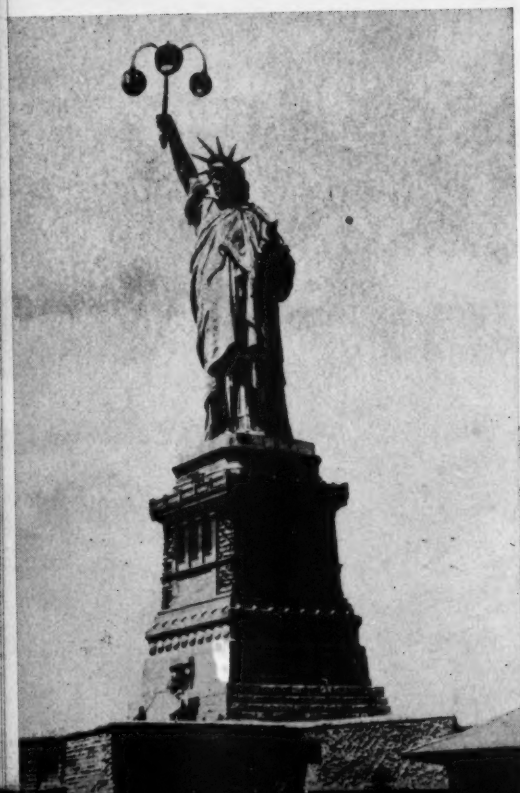
THE MARX BROTHERS never posed with the venerable gentleman of the voluminous beard, but that did not stop the photo-humorist from using a pair of scissors to give the comedians something to work on. Fig. 3.

able, unless, as is more than likely, really good montage men are very scarce. Copying Europe, we have permitted montage to become overly arty and alienated the average spectator. Too many practitioners attempt to equal the work of abstract painters, while the simplest, and still more dangerous group, contents itself with pasting a hodge-podge of pictures lacking both taste and selectivity. See, for example, Fig. 5.

As in all human enterprises a point of view is required. In the examples I submit the point of view was chiefly satiric, and the work was insofar successful as it achieved the ironic clarity which I envisaged. For those whose bias is similar to mine I make the suggestion that they select a large, clear photograph of the U. S. Senate in session as a background for their first experiment. Go out to the zoo and make enough photographs of various animals to substitute for the heads of the different Senators. Keep in mind the illumination in the original large picture and try to duplicate the source of light in the photographs you take. For the sake of absolute comic verisimilitude, reduce the sizes of the heads of your animals so that they will be congruous when you have cut them out and pasted them over the various senatorial maps. After your picture is complete re-photograph the whole, because even if you lose some definition by this process it will be advantageous to have the complete composition on one level.

Other simple and satisfactory collage experiments can be tried by combining important ceremonies, such as weddings, inaugurations, and public entertainments which you may have photo-

"1929 AMERICA" is the title of this interpretation of a money-mad nation during the pre-depression boom years. Fig. 4.



graphed and substituting highly inappropriate or anachronistic faces, hands, and feet.

After some success with this form of montage, you will want to execute something a little more complicated and original. You may, let us say, wish to combine your pictures and all their strange unrelatedness on the negative itself. It is my impression that this form of montage is still very laborious and, unless you are a person of extraordinary technical ability, you are likely to be disheartened by



EXAMPLE OF a poor pastepot or COLLAGE. There are too many scenes included, all too small and disconnected in meaning. The result is confusing and formless. Fig. 5.

the staggering amount of work required to achieve satisfactory results. Some of the best montages made in the country by such people as Lewis Jacobs, Barbara Morgan, Irving Browning, ought to prove ready inspiration for the intelligent novice.

A start can be made by gathering all available snapshots and seeing what can be done with them by means of a pastepot and a pair of scissors. The next step is the planning of a composition and shooting of pictures to express a definite conception or idea as in the illustrations shown here. Sandpapering the edges of figures when pasting up helps provide smooth connecting lines.



"THE ALL-AMERICAN GIRL" (above) pastepot-portrait brought recognition to the author of this article as an artist in this form. It was widely reproduced. Fig. 6.

PAINTERS have used collage, as indicated by this interesting and effective example of combined photography and art work (below). From *La Belle Jardinière* by Max Ernst. Fig. 7.



HOW TO USE YOUR CAMERA EYE

**Create new seeing habits by using
your vision like a camera lens**

By LEO NEJELSKI*

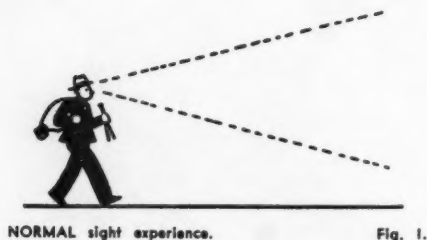


Fig. 1.

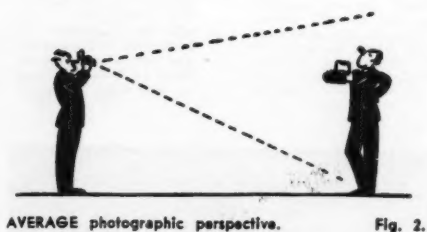


Fig. 2.

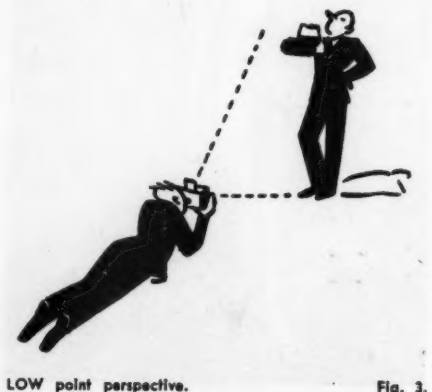


Fig. 3.

WE are creatures of habit. All our mental and physical actions tend to fall into definite routines and patterns.

The average person has a very limited habit of sight. (See Fig. 1.) He looks ahead to escape bumping into objects. He looks down to avoid the holes and bumps in his path. That is the range of his seeing.

Most people see only what they need to see for self-preservation. They are in the habit of exerting only a minimum of muscular and mental effort.

Observe the average man after he buys his first camera and notice how closely his picture taking follows his sight habits. He starts out by photographing the familiar things about him. He is eager to make a record of his family, his relatives, his home, his dog. Then he either puts the camera away until someone comes to visit, or until he begins to wonder what to photograph next.

Up until the moment when he begins to wonder what to photograph next, he is following his sight habits and recording his seeing on film. (See Fig. 2.) This process has nothing in common with picture making, the expression of thoughts and emotions by means of photography. Neither does it require any considerable mental, or physical, energy. Nor does it add to his sight experience and the richness of life.

He is merely putting into more perma-

* From *The Camera Eye*, Knight Publishers, Inc. \$1.50.

LOW point perspective.

nent form the fleeting glimpses he has each day of the things and people about him.

Very few camera owners get beyond the record making stage. They miss the real joys of breaking old sight habits and creating new ones. They also miss the exhilaration that comes with new discoveries and new achievements.

Low-Point Perspective. In addition to the normal, or average, photographic perspective, the next most popular is the low-point perspective. (See Fig. 3.) Many use this perspective as a stunt. Many others use it because they find it interesting. However, very few people use it to make clear the emphasis of the thought, or emotion, they are endeavoring to express.

Some photographers achieve only bizarre effects. They show minute heads above enormous feet, for example. Such effects are interesting, but they lack the satisfying sincerity of pictures made from low-point perspectives to capture and emphasize a mood or spirit.

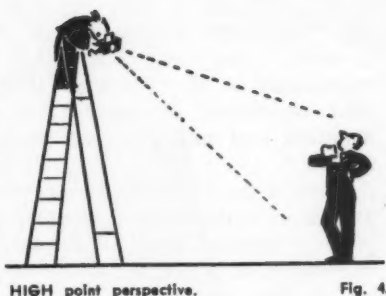
Examples of the latter are pictures of Mussolini. Those taken from a normal-sight perspective make him out a mere man. Those taken from a low point emphasize a strong jaw and cause the entire figure to seem more powerful, dynamic, and gigantic.

There are practical considerations in the low-point perspective, especially in making portraits. When the figure, or head, is outlined against the sky troublesome backgrounds are eliminated. The second consideration involves perspective. The parts of objects nearest the camera always appear the largest. In some cases this is desirable, while in other cases it may tend to destroy the value of the thing being photographed.

Low-point perspectives give new dimensions and new patterns to inanimate objects. A dish photographed on the flat may seem ordinary and uninteresting because only two dimensions can be shown. Photographed through clear glass from a lower point, part of the bottom can be shown also, imparting greater knowledge of the dish to the person seeing it and adding the third dimension.

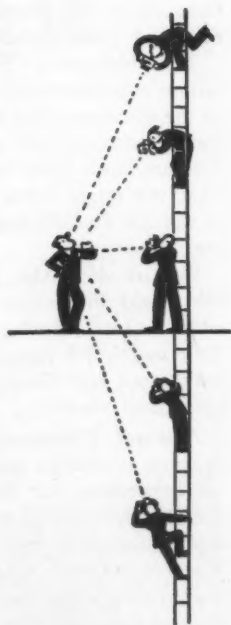
High-Point Perspective. Just as there is a wealth of sight experience and a great many interesting pictures in the low-point perspective, so is there an added treasure of pictures and experiences in the high-point perspective. Stand at a second-story window, or higher, and see how dramatic the long shadows of passing people become in late afternoon.

Most people fail to make pictures from a high point because they, or others, may

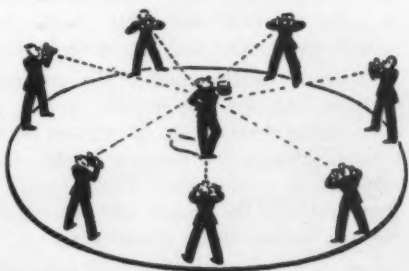


HIGH point perspective.

Fig. 4.



VERTICAL positions. Fig. 5.



HORIZONTAL positions.

Fig. 6.

say, "That is not the way you see things normally." Any sight is normal if it is experienced at all. The only abnormal sight experiences are astigmatism, color blindness, and such deviations from the normal.

Whereas the low-point perspective has a tendency to emphasize stature, the high-point perspective tends to *decrease* the importance of a person and to increase his, or her, anonymity. (See Fig. 4.) Portraits made from the high point become more impersonal because the distinguishing characteristics, the jaw, nose, eyes and mouth, become more obscured.

The high-point perspective deserves serious experimentation, however. It leads to the discovery that it will yield very arresting patterns and create many moods that are both fresh and satisfying. As a start, you might try to photograph a man, or woman, rushing to catch a bus, or street car.

Patterns of bricks, people, or automobiles yield interesting negatives and exciting prints. But these treasures are not there merely for the asking. They must be sought out and discovered by every man for himself alone.

Normal Perspective. Some of the previous comments might seem to convey the impression that the normal-sight perspective produces pictures not quite interesting enough or high enough in quality. The greatest percentage of pictures hanging in any exhibition are made from a normal-sight position. This one fact speaks for itself.

Great emphasis is placed here on the alternate positions, other than the normal, in order to make the value of the frequently overlooked positions entirely clear.

When in doubt whether the alternate position improves the picture or not, go back to the normal. Do not choose an alternate position for the sole reason that you wish to be different. That attitude is comparable to the person who wears pink neckties merely to be conspicuous.

Let us understand clearly at this point that high and low perspectives do not in-

clude only the positions shown in the figures shown here. From a normal sight position we look up to see the top of a building. Also from a normal position we look down on a child.

The important point to remember is that the normal sight position is not the only position from which effective and interesting pictures can be made.

Other Positions. There are limitations to the depth from which photographs can be made but the high viewpoints are less limited. (See Fig. 5.) While the subject illustrated in the diagram is a person, the principle can easily be applied to objects, as well.

It follows that it is not only possible to photograph from any point vertically, but it is also possible to photograph from any position in the horizontal plane. (See Fig. 6.) It is not always necessary to photograph a face to depict the character of a person. The back may be more dramatic in emphasizing old age than the face alone.

This may seem like a long way of saying that a picture can be made from any angle, or position. However, many people using cameras do not realize this until after months, or years of pure recording.

After experimenting with pictures from other than normal sight positions, the taker discovers that even the so-called "trick" pictures are more interesting and dramatic than those taken from normal positions. They are interesting because they add to the viewer's visual experience and knowledge. From the maker's standpoint, the "different" picture satisfies a basic inner urge to be superior to, or distinguished from, his fellow men.

The advice which Rilke, the Austrian poet gave to a young writer also applies to photographers, ". . . get close to nature. Try to tell, as though you were the first man, what you see, what you live, love, lose . . . Tell all this with an intimate, tranquil, and humble sincerity. . . A work of art is good when it is born from necessity."



A WHITE CORD stretched across the track at the finish line bisects each picture. This enlargement from a 35 mm. frame proved that No. 8 won second place. Fig. 1.

PHOTO - FINISH

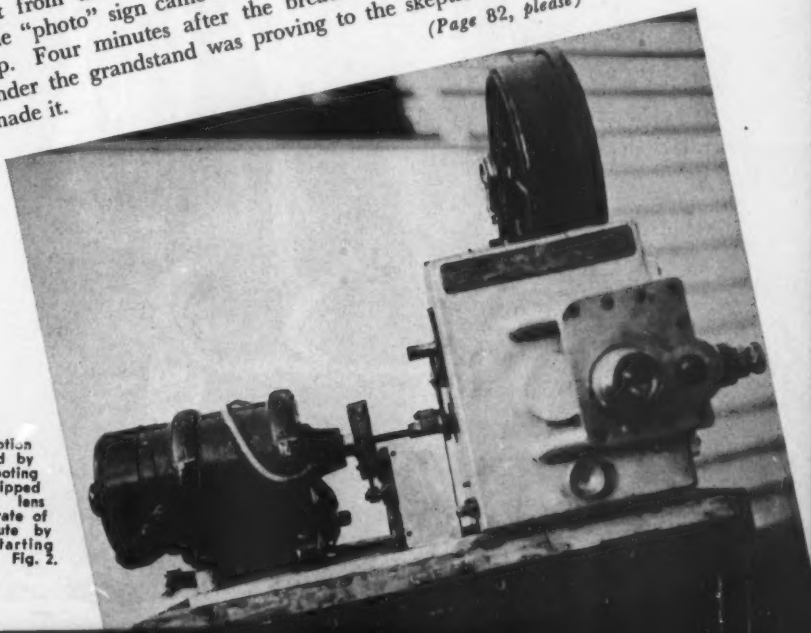
By BOB HURST

THE favorite, Barbaric, was leading by three lengths. Almost at the finish, a little chestnut mare, No. 6, forged ahead. Her outstretched neck was at the favorite's shoulder. The boy was laying on the whip. The crowd went crazy as she slid past the judges' stand just ahead of Barbaric. What a finish!

The "photo" sign went up where the winner's number was to appear.

Two minutes later, a dripping picture was carried to the judges' post from the room above, headquarters of the photo finish men. The "photo" sign came down and a number went up. No. 6 was on top. Four minutes after the breath-taking finish a slide projected under the grandstand was proving to the skeptics that the mare had made it.

(Page 82, please)



THE HIGH speed motion picture camera used by Jack Thomas in shooting race finishes is equipped with a 2" f/1.5 lens and driven at the rate of 360 frames a minute by an automobile starting motor. Fig. 2.

ROYALTY BEFORE



THE LENS

By JOHN HUTCHINS

Illustrations by Dorothy Wilding

Dorothy Wilding, famed British woman photographer of celebrities, her approach and methods as described by Ace U. S. portrait artist.

AFTER the Coronation of His Majesty King George VI and Her Majesty Queen Elizabeth of England, a special sitting in the Royal Family's private throne room was arranged for Britain's number one woman photographer, Dorothy Wilding, portrait maker to the British world.

The resultant picture of the Royal family, shown on the preceeding page, has hung in salons over the world, not because of the subject matter, but because of the sheer beauty of the photography. It was made with a Century Studio Camera, *f*8, 1 second.

I was totally unprepared for Miss Wilding's vivacity and charm when I interviewed her during her recent stay in New York. The quiet dignity and soft tones of her pictures had led me to expect a slow-moving, somewhat introspective person. Instead, I found a vivacious, energetic woman whose enthusiasm for photography almost swept me off my feet.

In Miss Wilding's studio, an assistant turned on a bank of softly diffused lights mounted on a movable track immediately above and slightly behind the studio camera. The effect of this bank of lights resembled the old fashioned studio skylight. Next, a concealed spotlight was turned on the neutral background. The subject was lighted in front by two five hundred watt mazda lights which were noticeably softened and diffused. Miss Wilding posed her subject and began to focus.

"When are you going to turn on your lights, Miss Wilding?" I interrupted.

"They are on," she responded.

"Is this all the light you use?"

(Page 86, please)

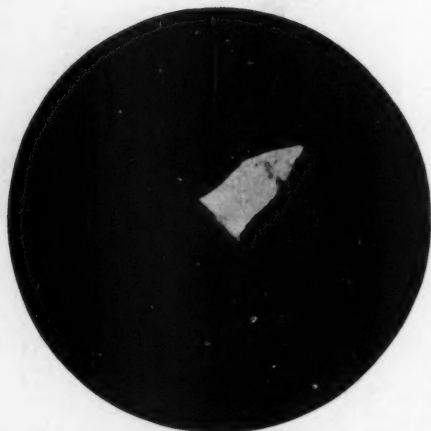
DOROTHY WILDING (above)—photographing Royalty, celebrities, or everyday folk—remains her usual exuberant self. She studies the lighting of her subject from a position next to her camera rather than on the groundglass. Rollei-flex, *f*8, 2 seconds. Taken by Charlotte Becker. Fig. 1.

THE MOST inaccessible celebrities are those who are not dependant on publicity. George Bernard Shaw (below) likes to be photographed. Not at all camera shy, he willingly strikes a pose but dislikes to hold it, so the photographer must be on the alert. Century Studio Camera, *f*6, 2 seconds. Fig. 2.



P H O T O G R A P H Y B Y

INVISIBLE LIGHT



HEATED electric soldering iron (above). Warm surfaces, even though not visibly red, can be photographed in total darkness with infra-red film. No filter is required, and exposure may be 1 to 5 minutes at f4.5. Fig. 1

By JOHN N. HARMAN, JR.*

IMPROVEMENTS and refinements made in photographic recording materials have repeatedly extended the usefulness of the average photographer's equipment. Witness the advent of high-speed films, fine-grain materials, and color films—all tremendous achievements. With the lion's share of attention going to these attainments, there is great chance of our overlooking equally important improvements that are less well known. Such a field is Infra-Red photography—an opportunity for making beautiful photographs that is all too often neglected.

Infra-Red film is proving of great value in outdoor pictorial work and in photographing scenes with a strange, new kind of beauty. Outdoor subjects bathed in sunlight seem magically transformed when



ORDINARY orthochromatic film (right) produces a print with a bald sky. Compare with the shots of the same subject on the next page. Courtesy Eastman Kodak Co. Fig. 2

* Agfa Ansco Corporation.

DARK sky and "snow-like" foliage are characteristic of infra-red photographs. Eastman infra-red plate, Wratten 25(A) filter. Fig. 3

photographed by Infra-Red. The world somehow becomes a fantastically beautiful place, with glistening foliage and rich, deep recording of blue sky tones. For the outdoor pictorial worker, Infra-Red photography is a new way to glorify scenic subjects that often look so commonplace when recorded on ortho or pan films.

A word or two about the unusual properties of Infra-Red film helps to show the reason for its remarkable recording qualities. Infra-Red film, like all sensitized materials, has a normal sensitivity to visible light, but in addition, it possesses a sensitivity to radiations which lie in and beyond the red end of the visible spectrum. (Fig. 10.)

As most camera users know, panchromatic films show about the same range of sensitivity to light as possessed by the human eye. As a result, the tone recording in black and white produced by pan films is quite life-like and normal in its appearance. In the case, however, of Infra-Red film, invisible radiations play a part in taking the picture, and it is this difference in sensitivity that is responsible for the apparently magical change in the tone recording given by Infra-Red materials. It is as if one could see how the world looked with Infra-Red light as the only illuminant.

The practical effect obtained by taking photographs with only this narrow range of sensitivity to infra-red radiation is peculiarly interesting. Blue skies are



WELL-DEFINED cloud masses and correctly rendered greens are obtained with panchromatic film and a Wratten K2 filter. Fig. 4



LACK of detail in the shadows and dark portions of the subject are characteristic of Infra-red. Agfa 35mm. Infra-red film, 1/25th second, $f/3.5$. Fig. 5

CLOUDS appear to be balls of cotton in a black sky. Agfa 35mm. Infra-red film. Fig. 6



rendered very dark, and white cloud formations are brought dramatically into relief against this darker sky. Water scenes, likewise, show a surprising transformation, for here again the blues are rendered in deep tones, bringing objects in the foreground and other subject matter into great prominence. An interesting phenomenon occurs with sunlit landscapes photographed with infra-red light, for trees and leaves, as well as grass, are reproduced in sparkling, light tones, almost as if covered with snow. The reason for this queer occurrence is that such foliage contains a chemical known as chlorophyll, a remarkable substance that reflects a large amount of the invisible infra-red radiations present in sunlight.

Infra-Red film lends itself admirably to use in outdoor, pictorial photography. Outdoor scenes take on a majestic sort of beauty, and landscapes are pictured so attractively that one would almost call the film the perfect material for the outdoor, pictorial photographer. It is interesting to note that Infra-Red film has received wide recognition in Hollywood, where it is not only used for emphasizing the dramatic possibilities of a situation, but is also employed for making night-effect or moonlight scenes in direct sunlight. Anyone can emulate Hollywood and, with a roll of Infra-Red film, obtain night effects and moonlit scenes from sunlit subjects.

Still another application of the film lies in its use for cutting through the haze which is almost always encountered in photographs of long vistas. This haze, which is caused by the scattering of blue and ultra-violet light when appreciable moisture is present in the atmosphere, is greatly reduced when the photograph is made with infra-red, as the infra-red rays are scattered to a much smaller extent. This application is of great help and importance to the photographer who demands the utmost clarity and freedom from haze in pictures of distant landscapes.

There are but few special considerations brought by the use of Infra-Red film and it is, in fact, a practical material for instantaneous photographs with any $f/3.5$, 35mm. camera or faster.

The main requirement is that a deep red or some other blue-absorbing filter, such as a deep yellow or orange, must be used on the lens of the camera when the exposure is made. This is obviously necessary, for otherwise the picture would be made partly from the film's blue sensitivity

exposure is seldom, if ever, objectionably long, for the best results are obtained on sunlit subjects and then there is always sufficient light. Many photographers frequently resort to the photo-electric type of exposure meter in determining the desired exposure for Infra-Red film. When



EVERGREENS usually photograph darker than deciduous trees. Agfa 35mm. Infra-red film and red filter; $f/2$, $1/25$ th second. Fig. 7

THE blues and greens of water and sky are rendered in deep tones bringing other subject matter into great prominence. Agfa 35mm. Infra-red film and red filter; $f/3.5$, $1/25$ th second. Fig. 8

and partly from its sensitivity to infra-red radiations. To obtain true infra-red effects, the blue sensitivity must be masked off by using an appropriate filter. This is, however, no problem and is, in fact, very simple, for the average exposure is the same with any blue-absorbing filter, being about $1/25$ th of a second at $f/3.5$ for outdoor subjects in bright sunlight. When considerable haze is encountered or when exposures are made on dull days, a larger lens opening or slower shutter speed may be necessary.

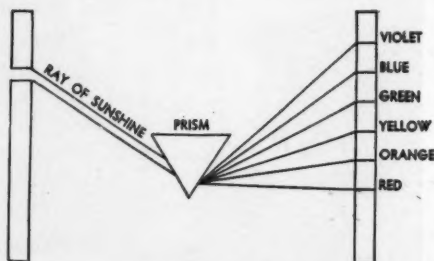
This exposure recommendation may seem excessive to those who have not used Infra-Red film, but it must be realized that with usual films, the entire range of color sensitivity is helping to record the picture while in the case of Infra-Red film only a limited range of radiation is reaching the film. In actual picture-taking, this



this is done, inaccuracies may result, for like the human eye, the photo-electric cell of such meters is relatively insensitive to infra-red radiations.

Some camera users are hesitant about using Infra-Red film because they have incorrectly understood that special processing was necessary. As all photographers who have used infra-red materials know, this is not so, for standardized developing procedures are quite satisfactory. A typical developer for 35 mm. negative stock such as Agfa 17, gives excellent results and, with the recommended developing time, produces a moderately high contrast, desirable in infra-red photography. It is interesting to know that Infra-Red emulsions do not suffer any difficulties in the matter of grain size, such combinations as Agfa Infra-Red film developed in Agfa 17 providing exceptionally fine-grain negatives.

A further note of interest regarding the use of Agfa Infra-Red film is that exposures do not necessarily have to be made with filters, although then the unusual infra-red effects are, of course, not obtained. Because the film has, in addition to its infra-red sensitivity, a sensitivity to blue light, it may on occasion be used without a filter to give a photograph that resembles pictures made with panchromatic films. The opportunity to use Infra-Red film in this way is often helpful when a camera is loaded with Infra-Red film and it becomes desirable to take a "straight" picture without bothering to wait until the camera can be reloaded.



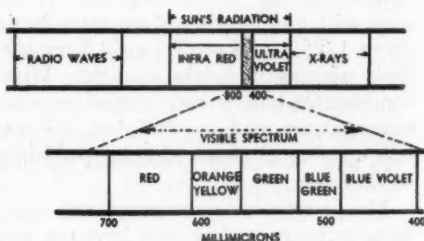
LIGHT is composed of waves of varying length. Each wave length of visible light produces a particular sensation which we know as a color. This is shown when a ray of sunlight is dispersed by a glass prism. Fig. 9

The black and white recording of colors in such cases is not exactly correct, but for most instances when this is done, the precise color recording is not a major issue. When used in this way without a filter, the exposure of Agfa Infra-Red film, as an example, will require about twice that used for fast, panchromatic film like Agfa Superpan Supreme.

Infra-red photographs of old documents, fabrics, etc., yield interesting results. If the subject is illuminated by two photoflood lamps in reflectors placed about 30 inches apart and 30 inches from it, the exposure will be about one second at f/16. In the field of criminology, infra-red has been applied to the photography of altered documents, forged checks, finger prints and blood stains. It also has applications in the protography of textiles, fibers, and hairs, particularly those which are dark and therefore difficult to examine visually under the microscope.

Photographs of hot bodies, such as a flatiron or soldering iron, may be made in total darkness using the invisible infra-red emitted by the object. No filter need be used on the lens if the object is not *white* hot. A hot electric flatiron can be photographed in this way in about one to five minutes at f/4.5. At temperatures below 400° C., the exposures are very long, about six hours at f/5.6 being required at 330° C.

As in many other instances in photo-



THE INFRA-RED is that portion of the spectrum which lies beyond the visible red. It is invisible to the human eye, and merges into the long heat waves. Infra-red radiation is emitted by all the common light sources which depend for their action on materials being raised to a high temperature, such as the sun, the arc lamp, the common tungsten filament lamp, and the lamps of the photoflash type. These are all satisfactory sources of infra-red. The lamps emitting "cold light", such as the mercury vapor tube, are not satisfactory in the production of the infra-red. Fig. 10



GATHERING hay on a Maryland farm. Agfa Infra-red film, red filter, 1/25th second, f4.5. With other film, the foreground objects all would merge into a monotonous gray tone. The Infra-red film gives bright whites to trees and other growing plants while darkening the sky to velvety black. By E. J. Eisenmeier, from F. P. G. Fig. 11

graphic work, it is true here, as well, that the best appreciation of the advantages and opportunities brought by Infra-Red film is obtained by an actual trial of the material. The photographs which illustrate this article may help to show the

strange and fascinating kind of beauty that can't be properly described in words. Once its pictorial possibilities are appreciated, Infra-Red film is sure to find its place in the particular photographer's film kit for outdoor work.

Photo FALLACIES

By RALPH HABURTON

Illustrated by the Author

AS in any new, live and growing art, many fallacious conceptions tend to persist among both experienced and inexperienced camera fans.

Fallacy: That a camera can be held steadily in the hands when making an exposure at 1/25 second.

No matter how steady the hand of the photographer, there will be a slight movement when shooting at 1/25 second or slower which will show in a large blow-up.

Compare Figs. 2 and 4. Fig. 3 was made with the camera on a tripod. Another shot of the same subject was made holding the camera in the hand. There is no noticeable difference between 8"x10" prints made from the two negatives. Fig. 2 is an enlargement of Fig. 3 and Fig. 4 is an enlargement of the negative made while holding the camera in the hand. Notice in these enlargements (each 35x) the difference in apparent sharpness, due to movement.

Fallacy: That the walls of darkrooms

must be black.

A room free from outside light, regardless of the color of the walls, will not permit the fogging of negatives or paper, since the amount of light can never be greater than the amount emerging from the safelight. It is true that any light is unsafe for photographic materials if they are exposed to it for too long a time.

Fig. 1 is witness to the fact that even safelights are not really safe. The picture was made on Panatomic X at f3.5, 1/5 second!

The darkroom, regardless of wall color, is as safe as the light used. A safelight with a clear yellow glass is suitable only for contact printing papers. Bright orange is used for chloride, chloro-bromide, and bromide papers, as well as lantern slide plates. With ordinary, colorblind films or plates an orange-red safelight can be used.

Deep red is employed for orthochromatic films and plates, while green is recommended for the slower panchromatic emulsions. Even the green light is not safe for super-speed pan emulsions. These should be developed in total darkness.

Fallacy: That good prints cannot be obtained from old or fogged bromide paper.

Paper that has been fogged or kept too long does give poor, flat, and often discolored images if used in the ordinary way. It can be rejuvenated, however, if it is soaked for one minute in a bath made of five grains of potassium permanganate and thirty minims of sulphuric acid in fifty ounces of water and then transferred to a sodium sulphite solution made with eighty grains of sodium sulphite and four ounces of water. After soaking in this solution for a minute the paper should be removed and rinsed. It may be exposed while wet or dried in the darkroom and



HOW SAFE is a safelight? It may be so unsafe, under certain conditions, that snapshots can be taken in the darkroom! Rolleiflex camera, Panatomic X, f3.5, 1/5th second. Fig. 1

used later. This treatment reduces the speed of the paper about one half.

Plates or cut film fogged by exposure to light may also be made usable if they are immersed in a solution made as follows:

Chromic acid 30 grs.

Potassium bromide . . . 60 grs.

Water to make 10 ozs.

The fogged material should be allowed to soak in this bath for about five minutes, then washed and dried thoroughly. This process increases the exposure five to ten times. All operations should be conducted in a darkroom.

Fallacy: That the emulsion speed of a given film is always the same.

Under present film manufacturing methods, rigid control of emulsion speed is impossible. The emulsion speed of one batch of film varies so slightly from that of another, however, that the latitude of the film is usually great enough to compensate for the difference.

Fallacy: That a bright light cannot be turned on in the darkroom until fixation is complete, i.e., for fifteen or twenty minutes after immersion in the hypo.

A bright light may be turned on thirty seconds after the print is dropped into the fixing bath. Ninety percent of fixation takes place within one minute after immersion if the fixing bath is not exhausted from over use.

Fallacy: That a hypo bath will not fix unless a hardener is added.

A hypo solution will fix whether a hardener is present or not. The hardener lengthens the life of the fixing bath and prevents the softening, blistering, and frilling of emulsions. It also prevents glossy prints from sticking to squeegee tins.



HOW LONG can you hold your camera steady? For $1/25$ th of a second? $1/10$ th of a second? Fig. 2



SNAPSHOTS of the above subject, taken at the same lens opening and shutter speed ($1/25$ th second), looked alike whether the camera was held in the hand or on a tripod. Fig. 3

BUT WHEN a 35 times enlargement was made, the hand-held shot (below) showed the difference in sharpness. Compare with the illustration at the top of the page. Fig. 4



PARADOX OF A DISTORTIONIST

Andre Kertesz first won fame as a realist and then, as if to prove his versatility, swung to the opposite camp as a distortionist.

By ARTHUR BROWNING

Photographs by Kertesz

IT has been said of Andre Kertesz that he is "an idler dabbling in photography". Unlike photographers who are in a continual flurry of activity and who chase around helter-skelter, he waits patiently and bides his time. While others wear themselves out, he gets results.

"Have confidence," he says, "in the transformations and inventions of chance." This sensible and smiling artist knows that the prosaic, everyday things which surround us conceal myriad unforeseen aspects which escape us because we refuse to pass time on the street corner or at our window; because we no longer know how to pass time playing with simple objects or with mirrors.

Kertesz is a lover of life. He glories in the beauties of nature and in the complexities of human nature. He accepts them as they are, and as a realist has no wish to alter or disfigure them from their original state. As a distortionist, however, he takes an entirely new and sensational approach.

Kertesz was one of the first of modern cameramen. Fig. 3 is one of his earliest attempts, made in Budapest in 1912 where at the age of eighteen he roamed the streets snapping pictures as photographers do today. Notice the simple, straightforward treatment accorded the subject, which, although it was made with a crude $4\frac{1}{2} \times 6$ cm. Ica box camera, compares

favorably with the work of many better equipped amateurs today.

In those early days, photographers invariably attempted to imitate other forms of art. A successful photograph then was one which most nearly resembled a painting or etching. It was the era of diffused, shadowless and detailless portraiture, when the photographer hid all the blemishes and wrinkles now eliminated by retouching, simply by increasing the amount of diffusion. The sum total, of course, was a fuzzy, flat depiction. The art of photography, whose most important contribution to humanity was its essential ability to reproduce objects exactly as they appeared to the eye, was being corrupted and rapidly losing its identity.

During this "dark age" of photography, Kertesz was one of the few gifted photographers who recognized that a hobby could possess all the qualifications for being an independent art. He saw its ability to reproduce any and all subjects in an unaltered state, or to allowing full play for artistic endeavor by the use of lights and the choice of composition. In Fig. 8, we see a cat sitting behind an unfinished piece of sculpture on a table, with a folded newspaper lying alongside. Few of us even today would photograph such a scene and almost no one in the early days of photography would have troubled to record it. But Kertesz, with his feeling for the simple



THIS FROLIC of the imagination betrays evidences of careful planning in balanced light and shade and sweeping curves.

Fig. 1

things, recognized the essential beauty of the subject and lighting. It is the simplicity and naturalness of the subject which makes it appealing.

Figure 2 gives us a further insight into Kertesz's methods. This is the result of an assignment to make a picture typifying a Parisian flophouse, a "hotel des



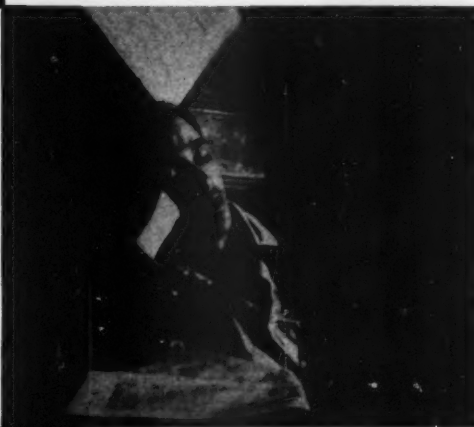
clochards." How many photographers could so successfully depict the forlorn, utterly squalid and miserable character of the place as well as Kertész, who, instead of taking a long, all-inclusive shot of the dormitory, focussed on the weatherbeaten leg reclining placidly on Bed 13. Here we see the stress placed on the human side of the picture, and this gives us insight into the secret of his technique—a probing into the unexpected, a depicting things no one else would think of.

In 1937, Kertész was brought to

America by an advertising concern. He presented an exhibit of pioneer modern French photography at the Julien Levy Galleries. Of this school of photography, Kertész describes himself as the "avance garde".

One of his first American pictures, Fig. 4, taken on a spring afternoon in Union Square, New York, illustrates the direct, humorous treatment. In this candid snap taken with a Leica, the procedure was straightforward. He did not tilt or fake to successfully convey the impression he wanted. The picture tells its story as simply, as effectively, and as unaffectedly as possible.

The realism of Kertész is a far cry from the style in which Andre Kertész is a recognized master—distortion. A primary characteristic of his distortions (see Figs. 1 and 5) is good composition. Too often composition is accorded little



TYPICAL of Andre Kertész's illustrative work is this depiction of the squalor of a flop-house in Paris. (Top of page.) Fig. 2

A CANDID shot made long before the advent of the "candid" camera—in 1912 when photographers busied themselves with diffused portraits and fuzzy landscapes after Corot. (Above.) Fig. 3

NO TILTING or faking could have bettered the direct, humorous treatment of this Leica shot. (Left.) Fig. 4





DISTORTED by a mirror, this vase of flowers retains its original beauty and is enhanced by the curving lines. Fig. 5
[39]

KERTESZ has caught the dramatic spirit of the dancer, Foster-Fitz-Simmons, in these two pictures. Speed Graphic, f4.5, 1/200. Figs. 6 and 7



or no consideration in the making of distortions. Makers of abstract or surrealist pictures seem to feel that they have a special artistic license. As a result the viewer is often left in a state of complete indifference or bewilderment, on seeing an unrelated mass of curves, angles, lights and shadows.

Kertesz has never allowed his artistic taste to be dulled by the nature of the subjects he is photographing. In all his distortions, weird and grotesque as they are, there can always be seen an emphatic, governing theme.

The vase of daisies, Fig. 5, although distorted into an unnatural state, still not

only retains its original beauty, but is even enhanced by the delicate formation and curvature of the lines, by the originality of the angle, and by the quality of the lighting. Fig. 1, while purely and purposely intended to be a frolic of fancy, still betrays evidences of careful planning and forethought. Observe the masterful blending of shades and tones, the artistic arrangement of the vertical and horizontal planes, and the delicate traceries of light and shade.

Kertesz, who started as a master of realism, as a producer of forceful, compelling and all-revealing depictions of life in its everyday aspect, proves the worth of

his artistic training by mastering the extremely difficult art of distortion.

He uses only the simplest device to obtain his effects—mirrors. These are the mirrors which, because of concavities and convexities in their surface, make children into giants and tall men into dwarfs. They are the mirrors of the crazy house in an amusement park. Undulating surfaces expand or contract the images reflected in them, producing weird, unnatural and often startling effects when photographed.

Peculiarly clear and brilliantly sharp pictures result from photographing these images. The opportunities for variation are endless.

When asked to explain his technique, Kertesz said: "I see and plan each subject differently. Lighting, pose, and composition are kept true to life. If I photograph a fantastic subject, I give it fantastic treatment. If my subject is humorous, it is treated humorously. I use a solid arrangement of vertical and horizontal masses. I try to give an honest, unbiased representation of what I see."

In the simplicity of his illustrative work, his still life studies, his portraits, and his distortions, Andre Kertesz has realized the artistic potentialities of a photographic technique which depends purely upon fundamental resources—individuality and originality.

About the time when Kertesz was beginning to develop his own technique, the World War broke out and, as a buck private, he fought through most of the war, until he was wounded and discharged from the army. The hundreds of documentary photographs he managed to make were lost in the Hungarian post-war uprisings.

For the next six years,

Kertesz tried his hand at many kinds of work and spent most of his time and money pursuing his hobby. He travelled from office to office, from job to job, until finally, thoroughly disillusioned of ever becoming a business man, he moved to Paris.

For the first few years, he did press photography for such European newspapers as "Le Matin", "L'Intransigeant", the London "Times" and "Le Nazione-Firenze", where he attracted attention by virtue of his unconventional methods in covering assignments. While other press cameramen bunched together, Kertesz loitered on the sidelines filming the significant background of world-shaking events. He was ridiculed and scoffed at by his colleagues, to whom celebrities and parades were the only conceivable news events. Kertesz stuck to his guns and men who once laughed at Kertesz's methods now admire and imitate them.

THE SIMPLICITY and naturalness of the subject makes this picture appealing. Fig. 8





MAN OF SORROWS. The low view-point contrasts with the towering yet pathetic figure and subordinates all other details to the character, since he is sufficiently strong in interest to warrant this composition. Reflex camera, f/11, 1/50th second, light yellow filter, Super-X film.

By ALFRED SIRE

Illustrated by the Author

VICTORY (below). An unusual composition climaxing in the center figure with upraised arm. Far more effective than the common mass shot of hundreds of upraised, saluting arms, since the eye is irresistibly drawn here to the lone, dominant figure which expresses the essence of the picture perfectly. Overprinted for dramatic effect. Leica, Elmar 5 cm. lens, f/11, 1/50, heavy yellow filter, Super-X film.

C A M E R A BEHIND THE LINES

THEY didn't want to have their pictures taken, those weary Spanish refugees. They had run the gauntlet by ship, on foot, in wagon trains and on mule back—shelled, bombed and harassed all the way.

I made the mistake of asking a woman to pose. She looked at me vacantly, sadly, as though she hadn't heard. And walked away. Pose, with naked misery before the world? It was no simple matter to make requests of people who have lost homes, possessions, relatives and ideals.

It was necessary to steal practically every picture. This was not difficult because my minicam was considered no more than a toy

(Page 81, please)



THE VANQUISHED.

A field gun is utilized to add a strong, dramatic effect, lending the finishing touch which explains better than words that these soldiers have been defeated. Reflex camera, 6x6 cm. f/8, 1/50th, Super-X film developed in Paraphenylene-Diamine.



PRAYER AND ANGUISH. This woman had just seen her son killed in an air raid. Leica, f/11, 1/50th sec., Panchromatic film in D-76. Print on Brovira.

INTO THE SUN

By B. G. SILBERSTEIN

Photographs by the Author

BY moving from the usual "sun behind the camera" position, you can get periphery lighting effects outdoors. Landscapes, street scenes, and other portraits can be made with the "contra-light" technique for pictorial and dramatic effects.

The chief problems are sun reflection, exposure, and printing. A lens shade should be used for all "into the sun" exposures but this, alone, is not enough to keep the sun out of the lens. Fogged negatives or concentric reflections result from inner lens re-



MARKET MORNING. The tree served as a lens shield in making this interesting example of an "against the light" photo. Rolleiflex, Agfa Superpan Press, f22, 1/150 second, medium yellow filter. Fig. 1

flections. The sun must be kept sufficiently to the side or else masked by clouds or buildings, as in Fig. 1, where the tree at the left served as a lens shield.

Baffling exposure problems occur because a general reading of an against-the-light composition cannot be made. Instead, separate readings are made of the faces or other parts of the scene where detail is desired. Or exposure is calculated only for the highlights.

Printing is the third important problem. Because of the great contrast in scenes of this type, dodging must be resorted to when prints are made.

These problems are illustrated in the reproductions.

Fig. 1 was taken very early in the morning as the natives were preparing for the fiesta in Chichicastenango, Guatemala. The sun was shaded by the branch of a tree. It was necessary to print the sky ten times longer than the rest of the picture.

Figs. 3 and 4, made in the same street at the same hour, contrast the orthodox method with the unorthodox. Fig. 4 is a typical "sun-



INDOORS OR OUT. Exposure was measured by the reflected light on the child's face. Rolleiflex camera, Agfa Superpan Press, f/8, 1/50 second, medium yellow filter. Fig. 2

behind-you" shot of a street. A successful picture, it nevertheless lacks the atmosphere and distinction of Fig. 3.

Notice the effectiveness of shadows. In Fig. 4 they are recessive and the result is flat. In Fig. 3 they strengthen the picture. The dark shadows on the men with the wagon add weight to the center of interest. The long, cast shadows lead the eyes

to it, making a well-composed whole.

Fig. 5, the woman with the jug on her head, provides an exotic touch. Many picturesque figures are found in the narrow streets and alleys of any city which can be adapted to the same type of composition if the sun is low enough to give long shadows. The woman is balanced by the two figures walking toward her, and the small area of shadow is balanced by the large, sunlit area. This was the most successful of several prints made of this fascinating Guatemalan scene although Fig. 1 also was hung.

Sharp-eyed observers will note that Figs. 3 and 5 were "flopped over." This can be told by the sign near the center, "Mayan Inn," the letters of which are in reverse.

In enlarging, pictures of this type re-

quire that test strips be made, one of the light part and one of the dark. Correct exposure time is determined in this way for the highlight and shadow areas separately. The shadow areas on the negatives should be there, but with some detail. It was necessary to print the upper and left-hand portion of Fig. 5 six times longer than the shaded part of the pavement on the right. In Fig. 2, no printing control was necessary, because no detail was wanted in the shadows and the shadows were left to go dead black. Other subjects which lend themselves to this type of photography include sunsets with a landscape foreground, courtyards or a passageway between buildings, children playing games on the sidewalk, figures, trees, and buildings. The time of day may be either early morning or late afternoon.

DAY BEGINS (right). Shot "into the sun". Compare with Figs. 4 and 5 which were made in the same street at about the same time. Rolleiflex camera, Agfa Superpan Press, $f/22$, $1/150$ second, medium yellow filter. Fig. 3



THE SAME street, shot with the sun at the photographer's back, provides a very ordinary snapshot. Agfa Superpan Press, $f/22$, $1/50$ second, medium yellow filter. Fig. 4





INTO THE MORNING LIGHT. Shadows and the two men lead the eye to the woman with the jug. The man at the extreme left facing the camera would have spoiled an ordinary picture. Rolleiflex, Agfa Superpan Press, f22, 1/150 second, medium yellow filter. Fig. 5

Such pictures depend on a balance of light and shade as well as a contrast in sizes and shapes. Large objects should be balanced by smaller ones. Light and shadow areas should never be equal.

When taking "into-the-sun" pictures, the lens must be kept out of the direct rays of the sun. Even with a lens shade, this is impossible if the sun is low. Use the shadow of a tree, a telegraph pole, or the shady side of a street to shield your camera. In Figs. 3 and 5 the shadow of the building protected the lens. In Fig. 2 the wall of the room served the same purpose. In Fig. 1 the tree served to shade the lens. In photographing sunsets it is pos-

sible to shoot without a lens protection if the sun is partially behind a cloud.

If there is little or no blue sky within the frame of the picture, use a medium yellow filter; but if there is a large sky area use a red filter to darken the blue and increase the prominence of the clouds. An exposure meter is almost a necessity.

In these pictures, the exposure was measured for the largest bright area. A reading was taken from the road in Figs. 1, 3 and 5. In Fig. 2, reflected light from the boy's face was measured. If enough exposure to give detail in the woman's dress had been allowed, the whole effect of the periphery lighting would have been lost.

HOW TO FILM



THIS prehistoric monster is really a Giant Water Bug. After strapping the hind legs of the insect to a stick, the bug was placed on a small stump. The circle of light is the setting sun. Reflex-Korelle, Eastman Panatomic X, f5.6, 1/100, G filter. Fig. 1



OPENING the lens wide resulted in a sharp foreground and threw the reflection of the sun in the water out of focus. Graflex with roll film adapter, Verichrome film, f4.5, 1/100.

Fig. 2

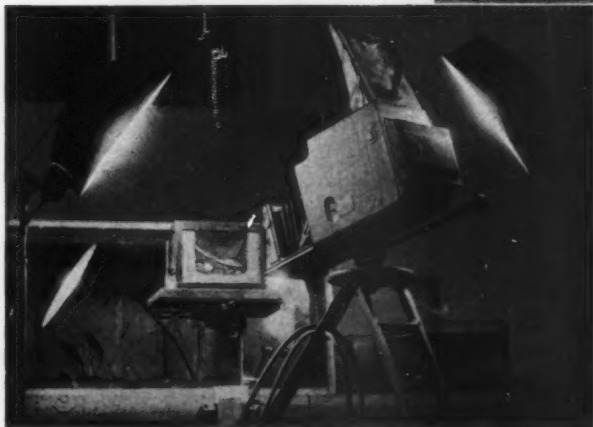
NATUR

By **LYNWOOD M. CHACE**

Illustrations by the Author



THE aquarium prepared for a picture. The model is placed in the narrow front section while the back section is filled with aquatic plants to form a suitable background. Fig. 3



THE set-up for an aquatic shot. The two lights are placed slightly higher than the aquarium. Fig. 4

Control the background, lighting and pose of your wild life subjects by bringing them into the studio.

FINDING and capturing on film the beauties of wild life combines an infinite capacity for taking pains with a thorough working knowledge of the equipment used.

The most suitable camera for nature photography is a reflex type, since the ground glass makes focusing and composing at close range accurate. A telescoping tripod equipped with a tilting top and a clamp-on camera support which can be attached to branches or other supports are necessities.

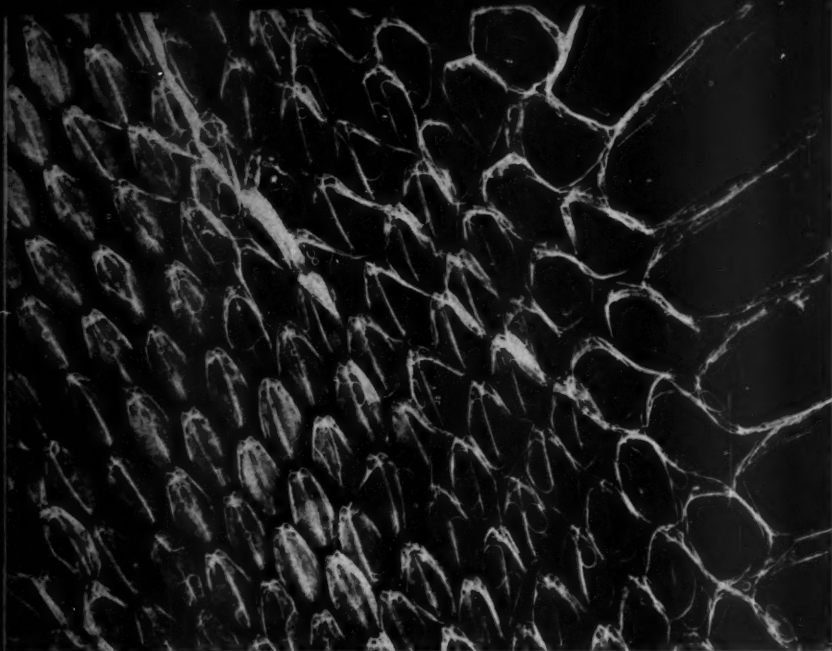
A telephoto lens, if the camera will take interchangeable lenses, enables the photographer to work at a distance. By stalking the subject, however, better pictures can often be obtained with a shorter focus lens which has greater depth of focus and

is faster. Close-up attachments which fit over the lens and permit a closer approach are useful with cameras which do not have the interchangeable lens feature. These make possible close-up pictures of flowers, bird nests, and other small subjects.

The physical difficulties encountered in field work are often discouraging. Too often a breeze springs up at the moment the photographer is ready to snap the butterfly on a thistle, or the dragonfly being focused upon flies off at the critical moment.

I have solved these problems by bringing specimens into my studio.

The small members of the animal kingdom are such fragile things for the most part that great care must be taken in



THE skin of a water snake laid on a piece of photographic paper produced this design. P. M. C. Bromide No. 1, developed in D-72, Fig. 5

catching them. I usually carry a supply of small jelly glasses and lids with me. These make satisfactory traps, since they have wide mouths which can be clapped over a model, while holding the lid underneath. It is a good idea to keep each model separate, so that no harm comes to it.

To make the subjects more tractable in the studio insert a small piece of cotton on which you have put a few drops of ammonia, purchasable at any grocery store, or a drop of ether, into each jar. Use enough to dope your model but not enough to kill it, since some insects just fold up when they die and are useless to the photographer.

With docile subjects effective arrangements can be made. Place the specimens in natural poses, using leaves, flowers, twigs, and soil as accessories. Work quickly, since the air will gradually revive them. If you find posing the subjects naturally difficult, go back to the woods and fields and study them in their natural habitat.

Bringing models indoors is especially

satisfactory in photographing aquatic life. For the setting, purchase a glass container or aquarium six inches square and a piece of heavy glass to fit inside. Cement this piece of glass two inches from one side to divide the aquarium into two sections. Use the narrow compartment for the specimens to be photographed and the large one for a natural background of aquatic plants with sand in the bottom, Fig. 3. This arrangement keeps the models in focus.

Take along a pail and a pair of boots when you go in search of subjects. Use a seine to gather the material. This can be made from a small sapling with a forked branch. Wire a piece of heavy screening to the forked end and strengthen this by nailing a stick across the end of the fork. By jabbing this seine into a pond bottom and pulling it out quickly, an amazing number of specimens can be obtained—dragonfly nymphs, newts, tadpoles, Caddis fly larvae, and, if you are lucky, a Giant Water Bug or two.

Put these into the pail. When enough specimens have been collected take them

home. The specimen or specimens to be photographed immediately can be put into the narrow section of the aquarium while the rest can be stored in a large aquarium kept for that purpose. If the

latter is well balanced a supply of subjects can be kept on hand and used when wanted.

I place a piece of black cardboard behind the aquarium, put in my specimen,

DENSE shadows in the background made possible this striking photograph of a Monarch butterfly on a bull thistle. Graflex, Eastman S. S. Pan film, $f5.6$, $1/200$. Fig. 6





A DRAGONFLY come to grief in the web of a golden spider. Spiderwebs covered with dew and lighted by an early morning sun make good subjects for the nature photographer. Eastman View camera, Eastman Commercial Pan film, $f/5.6$, $1/100$. Fig. 7

THE vampire of the ponds at work. The victim of this Giant Water Bug is held tightly by the bug's powerful front legs while it sucks his blood through its sharp, pointed beak. This type of shot can be obtained only in the studio aquarium. Graflex, Panatomic X, $f/4.5$, $1/50$. Fig. 8



set two floodlights of 1,000 watts each on either side and in front of it, stand my camera about two feet from the aquarium (See Fig. 4), focus, and I am ready to make a picture. Using S. S. Pan film I find my average exposure is $1/50$ at $f/4.5$.

Small fish "models" can be netted in nearby streams or ponds. Bay sunfish, minnows, and even small trout and perch

can be successfully photographed in the aquarium.

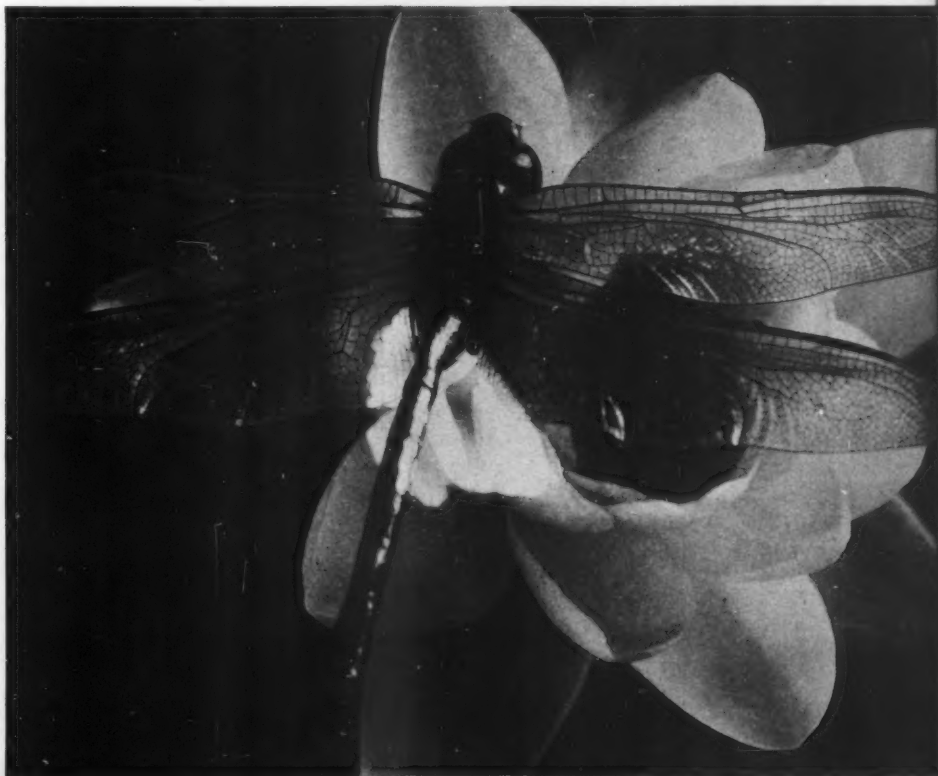
If you are looking for decorative subjects, purchase from a pet shop or store dealing in supplies for the fish breeder water plants used in commercial aquaria and such fancy species of fish as Japanese fantails, guppies, etc.

To get unusual shots try mixing speci-

mens. For fig. 8, an adult frog was put into the aquarium followed by his mortal enemy, a Giant Water Bug. It took the bug only a few minutes to reach the frog, grasp the frog's belly with its powerful

front legs, and get its sharp beak ready to strike into its hapless victim.


In such shots the nature photographer has opportunity to record events which it is impossible to photograph in the field.



A LUCKY field shot (above). The soft light of a cloudy day illuminated the delicate details of the dragonfly's wings. Portrait Pan film, $f/16$, $1/10$.
Fig. 9



A SILVER SPOT butterfly meets a Monarch butterfly in the photographer's studio (left). With the proper accessories, such as the tree trunk in this picture, and tractable models, the nature photographer has an unlimited field.
Fig. 10



EVERY available lensman in Chicago covered the recent \$2,000,000 granary fire, and obtained many dramatic news shots like this of exploding buildings. But few made the kind of record shots which insurance companies buy. Wide World Photo.

FIRE! ALARM FOR LENS MEN

By PRICE HEAD

NOT only are dramatic pictures to be made at a fire, but there are bread-and-butter shots for the wide-awake photographer.

Insurance companies are interested in

obtaining pictorial records of every large fire if they are made from an "insurance slant". Such photographs show the progress of the fire by means of an early shot followed by pictures of the important

stages. After the fire, the continuity should be completed with a picture of the total extent of the damage before repairing or salvage has started. Shoot special occurrences such as an explosion or a flame jump to adjoining buildings.

Water conditions should be recorded. If pressure is low, it should be shown in the pictures. Photograph any special equipment used.

Important in fire records is the time the picture was made and the position from which it was photographed. The successful fire photographer keeps a record for each picture of diaphragm opening, film, ex-

(Page 85, please)

General as well as closeup views of fires are saleable records (right).

FIRE AND WATER (below). Include picture data on water pressure for a complete fire record. Kodak Duo 620, Eastman S. S. Pan, f11, 1/50. By Robert N. Pancoast.





TIME OUT. Leica camera, Summar lens, f3.5, 1/100th second, Agfa Superpan. Taken at noon by Jo Jonas.

ONE HOUR FOR LUNCH

By S. GRIERSON

LUNCH-HOUR photography provides subjects that otherwise would go unnoticed by cameras and unhung by salons. It is worth carrying a

camera to work or keeping a second minicam in the office desk. You may well find that the proportion of successful shots is higher for the lunch hour than on a Sunday photo outing.

Portraits, skylines, landscapes and other

such subjects which make up the bulk of ordinary shooting are all impossible at noon under the midday sun. Therefore new and different subjects must be sought out. Perhaps it is for this reason that lunch hour snapshooting is so unusually successful. The subjects on this page were chance noon-hour shots, yet both met with good success in numerous salons.

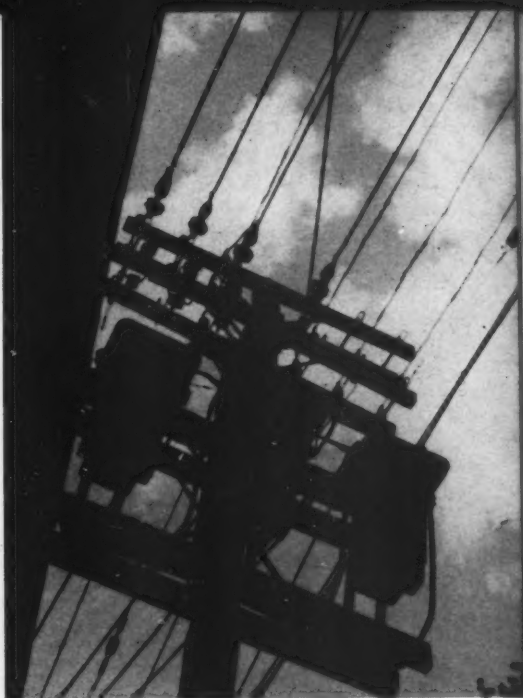
"Transmission" was made in a back alley in the factory end of town—a subject to be seen on a noon hour stroll, but hardly on a Sunday or holiday. I noted the strong design made by the telephone wires and equipment against the sky and fluffy clouds. I liked the weight of the building on the left, and the bit of tree at the lower right kept the whole composition from falling out of the picture at that point. Verichrome filmpack was used and the exposure was $1/25$ of a second at $f/16$ with a yellow filter over the lens. The film was developed in D-76 and an exhibition print made on Agfa Brovira Velvet developed in Eastman D-72.

Shop windows are fun to photograph and there are shops in the neighborhood of every factory or office. "Display", Fig. 3, was taken in daylight, but there are no noticeable glass reflections. The camera was simply moved until no reflections showed.

"Display" was made with Verichrome, but where many colored objects are included, a panchromatic film is more suitable. The exposure was $1/25$ th of a second at $f/16$, no filter. The film was developed in Eastman D-76 and the salon print was made on Eastman P. M. C. 2 developed in Eastman D-72.

The photographer is often aided when making window display photos by the fact that many shopkeepers keep window lights burning all day long. This additional light must be taken into account when determining exposure.

Heavy plate glass, or any glass, also calls for slightly increased exposure. Another warning is to be sure that the glass of the window is clean.



TRANSMISSION
(above), Verichrome
film, $1/25$ th, $f/16$, yellow
filter. Fig. 2

DISPLAY (below), Veri-
chrome, $1/25$ th, $f/16$, no
filter. Fig. 3



MINICAM CONTEST WINNERS

MINICAM'S PRINT CONTEST, with more than 10,000 photographs submitted, was such a resounding success that it took the judges a month to work their way through the entries from every part of the world.

A new contest will be announced soon, and, as in previous MINICAM contests, every camera user will be eligible to enter.

Print Contest cash prize winners are as follows:

\$100. First prize, to Glen Fishback, 2264 Tenth Avenue, Sacramento, Calif., for "Crow's Nest". See reproduction on next page.

\$50. Second prize, to Gustav Anderson, Amityville, N. Y., for "Birch Vista". Reproduction on page 60.

\$25. Third prize, to Fred Holt, 301 Clinton Street, Albion, N. Y., for "Care-free". Reproduction on page 61.

\$10. To Hilda Ferguson Hampfler, Longwood Gardens, Kennett Square, Pa., for "A Day on the Farm".

The following prize-winning photographs will be reproduced in future issues of MINICAM:

\$10. Max P. Haas, 353 Fifth Ave., New York City.

\$10. A. W. Prasse, 4152 Botanical Ave., St. Louis, Mo.

\$10. Charles G. Myers, Radio Station WKBO, Harrisburg, Pa.

\$10. Frank G. Halvorsen, 181 E. California St., Pasadena, Calif.

\$10. John R. Hogan, 129 S. 16th St., Philadelphia, Pa.

\$10. Alex R. Silverberg, 736 Linn Drive, Cleveland, O.

\$10. Howard Brisco, *Daily Record*, Bristow, Okla.

\$10. Nowell Ward, 629 Melrose St., Chicago, Ill.

\$10. Clarence Ponting, The Little House, Pangbourne, Berks, England.

\$10. Chester W. Wheeler, 71 Holmes Rd., Rochester, N. Y.

\$10. Donald Sewall Lacroix, 109 North Pleasant St., Amherst, Mass.

\$10. Richard Brennan, 4015 Boston Post Road, Bronx, N. Y.

\$10. F. Berko, Rewa House, Warden Rd., Bombay, India.

\$10. Louis Swartz, 43 East 27th, New York City.

\$5. George Rouquier, 1626 St. Charles St., Alameda, Calif.

\$5. Jon Perdue, 1616 Ouellette Ave., Windsor, Ontario, Canada.

\$5. Bert Popowski, Aberdeen, S. D.

\$5. Donald Buker, Coshocton, O.

\$5. Ray Atkeson, 215 Sweetland Bldg., Portland, Ore.

\$5. Warren Transue, 6379 Ivarene Ave., Hollywood, Calif.

\$5. Earl Murray, Cordele, Ga.

\$5. Ed Neupert, 108 N. Vermilion St., Danville, Ill.

\$5. James R. Decker, 572 W. 39th St., San Pedro, Calif.

\$5. Edward L. Gockeler, 69 Park Ave., Saranac Lake, N. Y.

\$5. Dr. Robert Jeffries, Atchison, Kan.

\$5. Bruce Cole, Clarinda, Iowa.

\$5. Martin Schwartz, 711 Fairmount Place, New York City.

\$5. Romeo Rolette, 2052 W. Seventh St., Brooklyn, N. Y.

\$5. Stephen Needle, 165 Sherman Ave., New York City.

\$5. Erno Vadas, 21-23 28th St., Astoria, Long Island, N. Y.

\$5. Rev. John W. Baechle, C.P.P.S., The Catholic University of America, Caldwell Hall, Cardinal Station, Washington, D. C.

\$5. Harold Blackstone, 77 South Ave., Rochester, N. Y.

\$5. F. G. Hall, Vinton, Iowa.

\$5. Prinzessin Eberhard Arenberg, Munchen, Mandlstrasse 5, Germany.



\$100, FIRST PRIZE, awarded by MINICAM to this print titled, "The Crow's Nest," by Glen Fishback, Sacramento, Calif. It was taken with Agfa Superpan Press Film, 1/100th second at f/11.

\$5. R. O. Taeger, 715 Huntoon St., Topeka, Kan.

\$5. Priscilla Tuthill, 251 E. Main St., Patchogue, N. Y.

\$5. Glenore Hyde, 1629 E. 20th St., Oakland, Calif.

\$5. George Kawamoto, 2054 W. 30th St., Los Angeles, Calif.

\$5. Gottlieb A. Hampfler, Longwood Gardens, Kennett Square, Pa.

\$5. George Edwin Peterson, 356 South Broadway, Los Angeles, Calif.



\$50, SECOND PRIZE, awarded to "Birch Vista" by Gustav Anderson, Amityville, N. Y.
Agfa Planachrome Film Pack, K2 (yellow) filter, camera on tripod, 1/10th second at f16.

\$5. Miss Katja Lecher, 1049 Kenyon Ave., Plainfield, N. J.

\$5. J. B. Highfill, Vinita, Okla.

\$5. Franc Ross, 770 North Marshall, Milwaukee, Wis.

\$5. Maurice Weber, 2415 Portland Ave., Minneapolis, Minn.

\$5. F. S. Coburn, 1258 St. Matthew St., Montreal, Quebec, Canada.

\$5. E. P. Haddon, 1401 W. 39½ St., Austin, Tex.

\$5. Victor Pokorny, 2104 Leishman Ave., Arnold, Pa.



\$25, THIRD PRIZE, awarded to "Carefree" by Fred Holt. Made with a Ziess Super Ikonta B camera, Agfa Superpan Press film, yellow-green filter, 1/100th second at f/8. A Weston exposure meter was used.

\$5. Wm. A. Oberlin, 246 Dalton, Ventura, Calif.

\$5. David Muramoto, 226 S. Vineyard St., Honolulu, Hawaii.

THE first prize winner thus describes the making of his picture: "A year and a half ago Sacramento was treated to the worst windstorm in its history. It was while on a news assignment covering the



"A DAY ON THE FARM," by Hilda Ferguson Hampfler, \$10 prize winner. Made with a Rolleiflex camera, Agfa Superpan Press, 1/100th at f/8, K2 (yellow) filter.

after-effects of the storm that I ran onto a group of boys playing among the piled up stumps and limbs of some of the fallen trees.

"I took a couple of pictures showing all the boys at play but the moment I saw this pair, I was struck with their charm and simplicity and resolved to get a pic-

ture for my own collection. I then dismissed the other boys and proceeded to get two negatives of these boys. It was my desire to stress simplicity and boldness. The line of procedure followed was to employ a low angle with the sky as background and only as much of the tree showing as was necessary to give sup-



"OVER THE TOP," by Hilda Ferguson Hampfler. Rolleiflex, Agfa Superpan Press, 1/100th at f/8, K2 filter. This is one of the prints which won no prize in the contest but was selected for editorial use at the rate of \$5 per print.

port and stability to the composition."

One of the prints by Hilda Ferguson Hampfler broke into the cash prize winning group, "A Day on the Farm". But because her print "Over the Top", which

was made at the same time, obtained such favorable comment, the judges couldn't resist reproducing it. The two together make a unit which proves again the dramatic value of grouping prints.

ROADS TO



Tap the home town newspaper market—not with news illustrations— but with promotion pictures.

By ROBERT SVENSSON

NEWSPAPERS have two commodities to sell—circulation and advertising—and like any firm with a product to sell, they must advertise. The Circulation Department, for example, must tell people about the newspaper's special features, its columnists, its comics, its speedy coverage of local and world news, the advantages of receiving the paper regularly at home. The Advertising Department must advertise the paper's position in its field and must direct the attention of readers to the advantages of buying through advertisements of local merchants. Most newspapers maintain a Promotion Department to prepare these advertisements. There lies a new market for the amateur photographer.

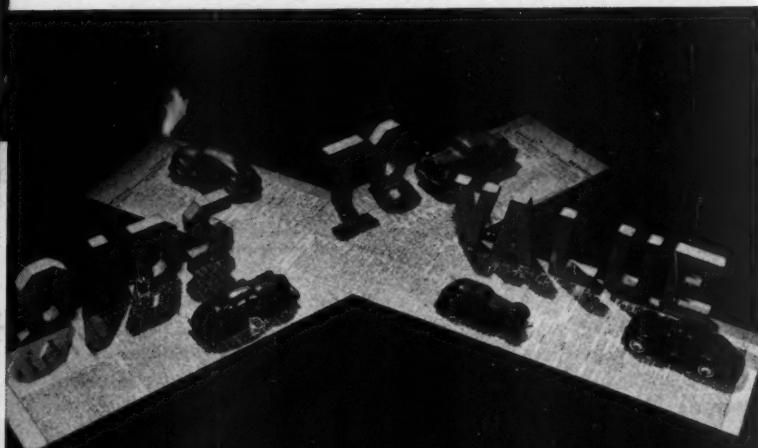
Promotion pictures cover a wider field than editorial pictures. There is no necessity to be on the spot when an accident occurs, nor to compete with newspaper

syndicates. The purpose of advertising photography is to attract attention and to tell a story.

What kinds of pictures are needed? All kinds! Everything from scenic to table-top shots as the accompanying successful pictures illustrate. Fig. 1 directs the attention of readers to the wide selection of values offered in the classified used-car columns. The setup was made by mounting two classified ad columns on heavy cardboard, then adding the block letters and toy automobiles (purchased at a 5 and 10 cent store).

The photograph of the globe upon which block letters were mounted is another table-top shot. In this case, a couple of props, some rubber cement and a little thought produced an illustration which graphically portrays the newspaper's leadership in classified advertising.

The picture of the gentleman enjoying



A GOOD table-top shot directed the attention of readers to the values offered in the classified used-car columns of the newspaper in which it appeared. Fig. 1.



THE FIELDS in which a newspaper leads is an apt subject for promotion pictures. The world leadership in classified advertising of one newspaper was presented graphically (above). Light-weight wooden letters were affixed to the globe with rubber cement. Fig. 2.



OUT TODAY was the title of this picture (right) which advertised the paper's annual special edition. Fig. 3.



PROMOTION PICTURES cover both the activities of the newspaper and of its advertisers. Special days make good copy. This shot was used to remind readers to buy Dad a "Father's Day" gift. Fig. 4.

the cigar illustrated a full page ad reminding readers to visit local merchants advertising in the paper and buy Dad a "Father's Day" gift. The title of the ad was, "Next Sunday He's the Hero." The merchants were so pleased with the picture

that some of them ordered large blow-ups for window display purposes. The photograph, made by a local photographer, brought \$25 from the newspaper and more from the merchants who ordered

(Page 78, please)



SUNSET ON CAPE COD. Argus camera, Planachrome film, f6.3, 1/50, yellow filter. By Karl A. Barleben.

ENLARGING AIDS

By KARL A. BARLEBEN, F. R. P. S.

DURING the last few years many aids to enlarging have appeared on the market—enlargers giving better definition, masking devices, and timing accessories, to mention only a few. An important addition to this parade is the new Micrograin Focusing Easel.

A number of new features have been incorporated in this easel. The adjustable paper stops or guides, mounted in grooves, recede into the board when the masking strips are dropped into place on the paper. The micrograin focusing device is to insure critical focusing. The two visible elements of this feature are a small circular spot in the center and an eyepiece at the front of the easel. Fig. 3 is

a diagram of the internal structure of the board. X represents the spot located at the center of the easel upon which the projected image falls. The image strikes a mirror at A, is reflected through two magnifying lenses, L1 and L2, and falls on a mirror at A1 which deflects it into the eyepiece.

Here the operator sees a portion of the negative magnified 15 times by the lenses, L1 and L2. When a 10x enlargement of a negative is picked up and enlarged 15x by the focusing device, the total magnification in the eyepiece is 150 diameters. With such an enlargement there can be no question about the sharpness or fuzziness of the image.

THE EASEL.
Note the spot in the center. The eyepiece is between the two mask clamps.
Fig. 2

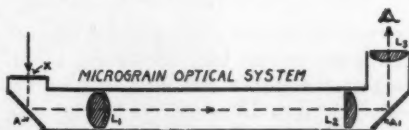
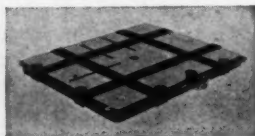


DIAGRAM of the optical system employed in the easel.
Fig. 3



CRITICAL

Your snapshots and how to improve them

In mailing prints, address to above department.

THE corner of a pier and two young hopefuls with a fishing pole is sure-fire picture material. "Fishing" (below) is a credible handling of this subject, although cropping the print to make it vertical might have achieved a better picture. Trimming a strip from the right-hand side would concentrate the interest on the center of activity.

Some workers prefer to let children pose themselves, since expressions are more natural. Here, however, posing the subjects would have achieved better results. The boy in the dark sweater merges into the dark water. He would have shown up better against the white pier and the boy in the white shirt would have contrasted with the dark background. Another successful pose would place the boy in the dark sweater in a sitting position with his feet draped over the pier and the boy in white standing behind, looking over his shoulder.

The picture as it is has an atmosphere all its own. The crouching boy, gives an air of expectancy to the situation and completes the circular composition of the reflection, the pole, and the boy in dark clothes.



FISHING. Rolleiflex Camera, Super X Film, f22, 1/100.

PHOTOGRAPHING nudes is a job for the master of the technique and artistry of photography, for there are no drapes to conceal lack of knowledge of posing or lighting. A nude is either a work of art or a distasteful snapshot



FIGURE STUDY. Leica Camera, f8, 1/25, two No. 2 photofloods.

of Miss So-and-So with no clothes on. Our criticism is that the man who took this was not sufficiently adept to attempt such a picture. The lighting is of a variety which might be adapted to copying pictures or making an interior.

The pose throws the breasts out of proportion and leaves a good deal of doubt as to whether the model is seated, standing, or lying down. The lower arm makes a graceless right angle, the arms look distorted, and the composition of the picture makes no sense. A study of ineffective prints, however, teaches how to avoid pitfalls and how to profit from previous mistakes.

"THE BRIDGE" has a genuine feeling of sunshine augmented by the shadows in the lower right-hand corner of the picture. The composition is good. However, there is not

(Page 85, please)



THE BRIDGE. Argus Camera, Agfa Supreme film, f11, 1/50, light yellow filter.

P O R T R A I T U R E

**What is the difference between a Portrait and a Study?
Which is the more difficult? At what distance should you
work for the best likeness? What is the best form of lighting?**

THE term "portraiture" is often loosely applied to any picture in which the face appears. However, a portrait, as it should be understood, is a likeness of a person portraying something inherently characteristic of the personality. Many photographs of people which go under the name of "portraits" should actually be called "studies". Quite often a study is more striking than the regular bread-and-butter portrait, and yet the former is usually the easier type to do.

Any amateur who has had the opportunity of attending what is often called "Camera Night" at his local club, at which time a professional model is hired to pose for the boys, will know the difference between a portrait and a study. At such gatherings the lights are usually arranged by one of the more advanced workers and the rest of the boys simply shoot the pictures. It is practically guaranteed that everyone who cares to expose a set of films that evening will have some striking exhibition pictures, which quite often leads the beginner to believe that he knows something about portraiture and in his innocence goes home and attempts to take sittings of the family.

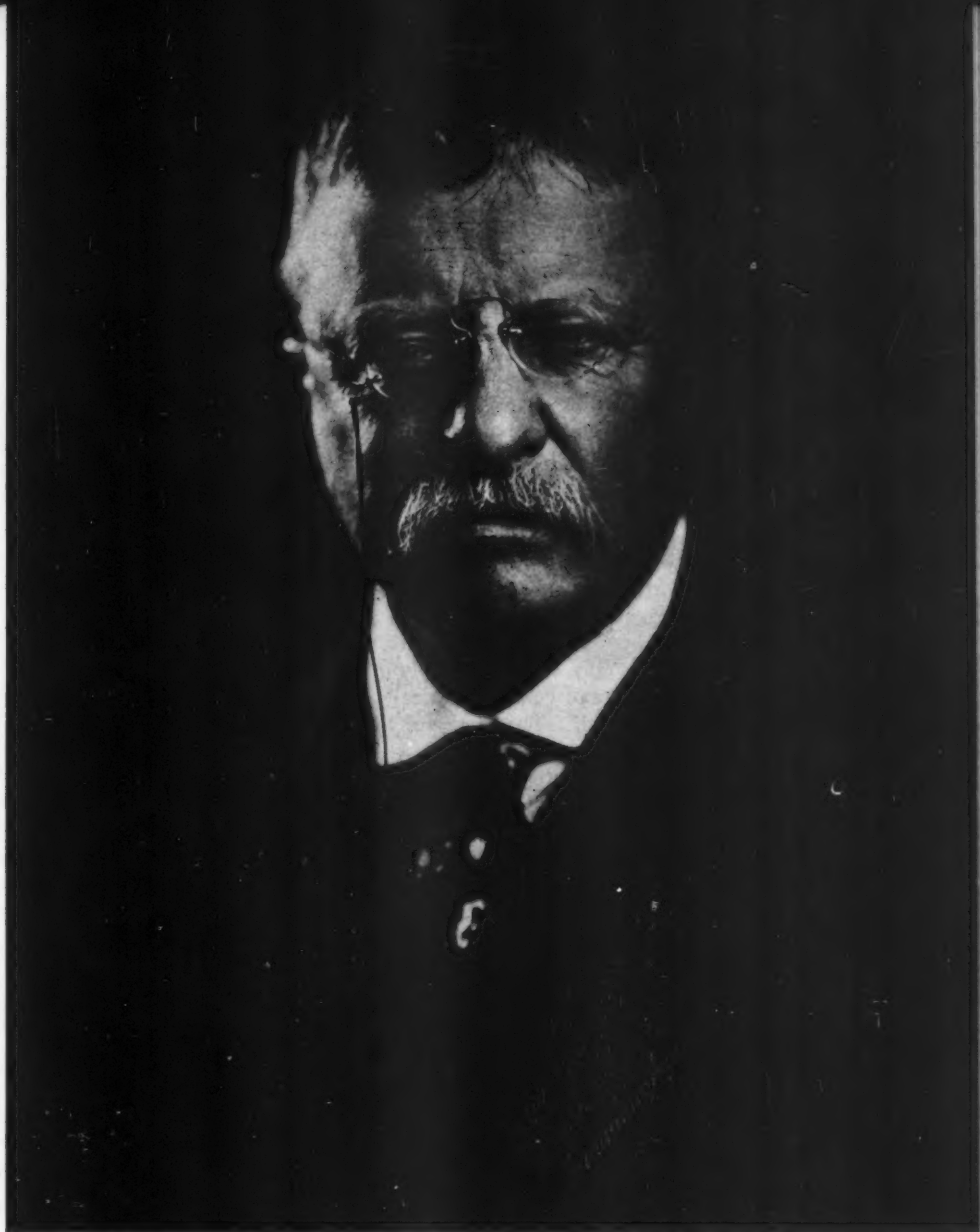
It does not take long to find out that there is a tremendous difference between

posing a well trained professional, who will assist more than is actually realized, and posing or attempting to pose the average stay-at-home who not only does not know how to pose but is actually afraid of a camera. Many a high salon reputation has been badly shattered in front of the home folks when the attempt at home-portraiture was a dismal flop. Right here let me advise you that if you have secret ambitions to become a salon exhibitor, leave straight portraiture alone and concentrate on character studies. The character studies are a thousand times easier, but paradoxically will attain for you much quicker recognition.

One of the reasons why we run into trouble when we take straight portraits is the fact that we have to please the sitter and not ourselves. In ordinary portraiture in which we pose an every-day business man against a plain background, we cannot fall back upon make-up or costume with which to make our picture appealing, aside from the face itself. The average man's face, while it may be a joy to his loved ones at home, is usually, photographically speaking, not of the type which will make outsiders either admire it for its beauty or for its expressiveness. Another thing, if you attempt to make him more dramatic by trying to strive for an expression not usual to him, you will find yourself hopelessly involved with a subject who was never intended to be anyone else but plain Mr. John Doe.

Also, we warn you if you have been admiring some of the Hollywood creations with the secret hope of duplicating some of this excellent work, it is rarely that your sister or your sweetheart or your wife





A PROFESSIONAL PORTRAIT, rather than a pictorial study, showing a third-dimensional quality gained by keeping left side of face in low key and focusing on nose and eyes as center of interest. Main light source at 45° to subject's left. Side light slightly to the rear and above right temple. Theodore Roosevelt by Underwood & Underwood.

will be the kind of model you can use for that type of picture. If you want to turn out the "glamour" type of study, be sure to supply yourself with the basic material first—that is, people who have facial char-

acteristics which have immediate striking force.

In professional portraiture there is usually not much time to fuss around with the subject, in fact, anyone who does,

violates one of the first principles in that type of work. We should work smoothly but with speed, so that we have finished with our sitting before our subject has had an opportunity to become either bored or tired. Strong lights make the average person appear tired and groggy after sitting under them for a few minutes—so speed is essential.

For good portraiture, the first thing to remember is that expression is the most important item. Your picture can be critically exposed, can be as sharp as nails, and in every way judged from photographic standards be perfect—but it will be a total failure if it does not manage to register the right sort of expression. To try to tell you that you should be either cheerful or serious with your sitter is to tell nothing, because each case is individual. Be your own natural self, be perfectly at ease, and you usually can make your subject feel reassured and confident that everything will be all right. That, in a nutshell, is about the quickest way to achieve co-operation between the sitter and the operator. An important point in securing a good likeness is the question of distance from the subject. It is sometimes forgotten that if you work closer with your lens than 8 ft. from the subject, you are going to get distortion in the face. Getting closer than this distance is perhaps the greatest single reason why many so-called portraits fail to be good likenesses. This question of perspective is not dependent upon the focal length of the lens, because whether your lens is a 2 inch lens or a 20 inch lens, if you use it as close as 3 to 4 ft. from the face they will both give you equally bad distortion, which means that if they are used at 8 ft. they both will give you the correct proportions.

Those who use a 35mm. camera for portraiture (and a minicam is extremely well suited to it) will find that a telephoto lens is extremely valuable, enabling the camera to remain the correct distance away and at the same time secure a large image on the negative.

Another thing which helps to make a good standard portrait is to remember that fancy lighting, while it may be very effective and successful in advertising stunts and glamorous studies, can often destroy the personality of an ordinary subject. If we make our lighting too tricky, the beholder is more tempted to be interested in the lighting than in the face of the sitter; and this is always an indication that the portrait has missed, even though the study is successful.

No matter how many fancy lightings are devised or invented, the best one is still the 45° lighting. There is no other form of lighting which will give as faithful and correct an outline of the human face. It is such a simple lighting that quite often the amateur is tempted to let it go and try other stunts, but if he will only study the work done by professionals who are actually in this business he will find that practically all of their top-notch work has the 45° lighting scheme.

A real portrait in any sense should be simple and dignified—which means, therefore, a plain background. Whenever one sees the introduction of complicated backgrounds, furniture, etc., one is tempted to think that the photographer was not quite sure that he would be able to make a sufficiently interesting picture of the person himself, but had to “gild the lily”, so to speak, by bringing in extraneous matter. The commercial pictures which we see in our high class style magazines should not be judged as portraiture but rather as fine examples of the sort of thing which will sell dresses, perfumes, or whatever the manufacturer had in mind when the picture was being taken. If you will analyze them closely you will see that while the pattern and design are usually of an arresting nature, the face of the model has none of the characteristics which we demand in portraiture but all the attention has been devoted to showing the dress or coat or shoes or hat to the best advantage—which is as it should be in such a case.

In good portraiture we should aim to

argus again

AMAZES EXPERTS!



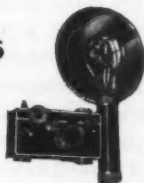
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give a feeling of roundness to the face. The two best ways to achieve this are, first, to use 45° lighting, and second, to focus the lens in such a manner that the front part of the face has the sharpest definition, allowing the ears and back part of the head to be of less sharpness.

The portrait under discussion this month is an excellent example of simplified but sound portraiture. (See page 69.) There is no attempt made to attract attention by having the subject take on the contortions of an acrobat. The background is simple and dignified in keeping with the importance of the personage sitting before the lens.

The focusing has been well handled, leaving the front part of the face in critical sharpness while the back portion extending to the ears is in a much softer definition. The nose and eyes, being the most important parts in a face, should always be the sharpest portion of the negative. If these features are not sharp, no matter in how many other respects the portrait may be good, it will always be a failure. Focusing on the front features without stopping the lens down too far is a good way of creating an artificial third dimension, that is, the illusion of depth. The critical sharp "front" focus makes the eyes, nose, and mouth seem to come forward as they do in actual life, and allows the ears to recede to their proper place in the background.

The use of the 45° angle light also helps further to create this illusion of roundness. The main lighting in this instance is actually a very simple light, as is evidenced by the strong shadow under the nose on the right cheek. No doubt a head screen was used to prevent excessive light from reaching the left cheek and ear. Keeping this portion of the face in a lower key tends to make the front features step forward. The strong side light used on the upper right side of the face, while at times dangerous, is a powerful method for creating relief between the

subject and the background. In other words, it avoids the sensation that the subject is plastered against a black support. Some photographers prefer to use this "relief" light on the background rather than on the subject itself, to avoid trouble with the rendition of the skull.

The operator did an excellent job in bringing out those characteristics which the popular conception has accorded this man of history. His vigor and vitality are well demonstrated by the strong skull structure, while the keen, searching eyes show that he was a keen scholar and clear thinker. The shape of the mouth and chin bring forth the aggressive bulldoggedness which made him such a formidable fighter in the political ring. Notice that the whole emphasis of the picture is directly on the face where it belongs—all the other elements, including clothing, being subdued so that the eye continuously has to seek out the face. This is a fine illustration of how a leading photographic house manages to do high-class work along sound, conservative practices.

For those who are desirous of securing similar results, it may be interesting to point out that the use of an orthochromatic, or color-blind, film will simplify bringing out the skull structure and skin texture which play such an important part in making a good portrait. Unquestionably, panchromatic film represents the highest development in emulsions but for portraits, and especially those of men, due to its high red sensitivity it has quite often a tendency to over-correct with the result of flattening out the face.

Those of you who use only roll film cameras and are desirous of continuing to use the panchromatic film are advised at the next portrait sitting with artificial light to use either a light green or light blue filter over your lens. This will, to a great extent, have the same effect as using orthochromatic film, and you will find that your picture will have a better portrait quality.



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+ 32 oz. next 10 films . . .	1.25

CARTONS

⊖ 1 gal. first lot only . . .	3.00
+ 1 gal. next 80 films . . .	3.00
⊖ 5 gal. first lot only . . .	12.00
+ 5 gal. next 400 films . . .	12.00
⊖ 25 gal. first lot only . . .	45.00

A Defender PRODUCT

DEFENDER PHOTO SUPPLY CO., INC., Rochester, N. Y.



FLASH snapshot of 4-day-old baby furnished the nucleus of the announcement. Fig. 1



LEICA camera and two lights were set up to copy the cover. Fig. 2

Photographic BLESSED EVENT

By W. F. HAGENLOCH

THE picture of a movie title, "The Birth of a Baby," gave me the idea. Using the cover of *Life*, I pasted across it an enlarged copy of the movie title and substituted the baby's birth date for the magazine publication date.

The makeup of the front page was started a month in advance of the expected date with the making of a copy negative of the movie title on Commercial Copy film, using two photofloods placed at an angle of 45 degrees. The negative was developed in D-11 for maximum contrast, and printed on glossy paper. The lettering was strengthened by outlining with India ink and the enlargement pasted across a cover of *Life*.

After the baby's birth, the date was pasted on the cover by taking July 11 (regular issue date) and changing it to July 12 by pasting



THE COMPLETED announcement as it was printed on 8x10-inch sheets to allow for the French fold along the dotted lines. Fig. 3

in the "2." The cover was now ready to be copied. A Leica was used to copy the cover. (Fig. 2.) At $3\frac{3}{4}$ feet the 90 mm. lens just covered the proper field and left a margin of safety against parallax.

I viewed the set-up through a Kodak Filter Test Chart which showed that best contrast could be obtained by using ortho film. Fine grain Plenachrome, without any filter, developed in D-72 gave a snappy print. This completed the negative for the cover.

On the third page I printed a picture of the baby with the announcement of weight, time, place, etc. To avoid hurting the baby's eyes with photofloods, I bought a flash synchronizer. In many hospitals, no one is permitted near the babies except the mother and nurses. I finally succeeded in making a picture of my

(Page 84, please)

4 New Brooks Accessories

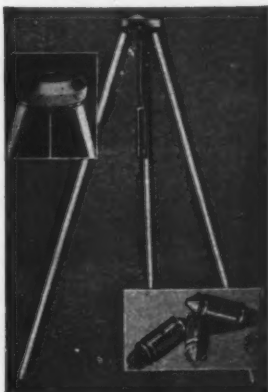


NEW!

Bee Bee NECK- POD

**Holds Camera
Steady—
Even During
Long Exposures
—Eliminates
Blurs**

This handy new minicam accessory measures only 6 1/4 inches long, when closed and extends to 12 inches. It is heavily plated with chromium and has a cleverly constructed head that holds the camera firmly in either horizontal or vertical position, as desired. It sells, complete with an adjustable leather strap and a carrying case, for only..... **\$2.50**



NEW!

Bee Bee ATLAS ALL- CHROME TRIPOD

This new Bee Bee Tripod is suitable for use with all types of cameras—even heavy 8 x 7 models and cine cameras—and is easily adjusted to the ideal height for use with reflex cameras. Its large diameter head serves as a very firm support for base of camera. It has reversible feet which are pressed on one side and rubber-tipped on the other. Though the legs are of rigid, heavy wall construction, the tripod is extremely light, weighing only about three pounds. When closed, legs are only 23 inches long. Open, they extend to 60 inches. Packed in a neat tubular container, weather-proofed with Skytogen, which may be used as a carrying case. The price is..... **\$7.50** only

**Head and
Entire
Top
Section
Heavily
Plated
with
Chromium**



NEW!

Bee Bee

CHROME TRIPOD

Legs are of drawn brass, with double locking pins to make them rigid. Rubber tips prevent slipping and scratching when tripod is used on floors. Legs may be adjusted as desired without loosening the screws at top that hold camera firmly in position. Packed in a durable tube-shaped container that is weather-proofed with Skytogen and may readily be used as a convenient carrying case. Available in the following sizes:

3-sections; closed, 16 1/4"; extended, 42".....	\$2.75
4-sections; closed, 15 1/4"; extended, 48".....	\$3.75
5-sections; closed, 15 1/4"; extended, 58".....	\$5.00

NEW!

Bee Bee CHROME TILT-TOP



This new Bee Bee ball-type tilting and panning tripod top may be used with almost any camera but is particularly suitable for use with the new Bee Bee Tripods. Made of steel, brass and aluminum, heavily plated with chromium. Tilting and panning are effected by means of two conveniently located thumb screws. The reversible tripod bushing accommodates either domestic or foreign cameras. A 5" handle controls the movements with utmost smoothness. The top surface is 1 1/4" in diameter, large enough to support almost any size camera. This new Brooks accessory weighs only 14 **\$2.50** oz., is packed in a neat carton, and sells for only.

BURLEIGH BROOKS, Inc.

Dept. 38-B, 127 W. 42ND STREET, NEW YORK CITY



By VICTOR H. WASSON

ANOTHER skull tissue tester for armchair amateurs, with all the fun but none of the hardships.

Credit your score with ONE for each complete and correct answer. Questions with more than one part are scored in fractions. Then compare with the answers that follow.



1. If you had a negative, that produced a print like this, would you be sure that—

- A. extreme cold prevented the shutter from opening properly;
- B. the everready case flap got in the way;
- C. the film was light-struck.

2. If someone mentioned that he was making bromoils, you would know that he—

- A. made headache powders;
- B. used an ink-printing process;
- C. rubbed his prints with bromide and wax.

3. Check any incorrect statements—

- A. Some development processes call for HYPO in the developer.
- B. If you took pictures by the light of a ruby lamp, the effect would be the same as though a red filter had been used.
- C. Resolving power is the ability of an emulsion to record fine lines placed side by side without blurring.

4. What methods are employed to produce on a screen, positive images from negative film run through the camera?

- A. Image-reversing projection lenses.
- B. Positive transparencies made from original negatives.
- C. Direct positive film.

D. Chemical reversal entailing secondary exposure.

5. Let's try a little word association. Match each word in the first column with its mate in the second.

- | | |
|---------|------------|
| Release | Extinction |
| Swing | Reich |
| Visual | Filter |
| Turner | Cable |
| Factor | Back |

6. If you had to do some printing, but found you had run out of acetic acid short stop, you could raid the kitchen and substitute—

- A. lemon juice;
- B. lime soda;
- C. white vinegar;
- D. pickle juice;
- E. vanilla extract.

7. Unfortunately, the only equipment we'll allow you on this assignment is a 98c box camera. So, if you had to shoot a racing car, at 100 M.P.H. you would shoot from—

- A. a 45 degree angle;
- B. head on;
- C. broadside.

8. While we're on the question of speed, if you made a 2-second exposure of a slowly waving flag on a pitch dark night by the light of a flash bulb, would the motion be stopped?

9. If all the shutter settings on your camera were out of order except 1/25th and a scene required a 1-second exposure, could you do it?

10. If you were sent out to take some pictures on infra-red film and had your choice of one of the following, you would take—

- A. a lens shade;
- B. sun glasses;
- C. red filter;
- D. exposure meter;
- E. telephoto lens.

Test your photographic knowledge—then see answers at end of Kwiz.

11. Suppose you owned a battery of lenses for your miniature labelled thusly:

1. 50 mm.
2. 29 mm.
3. 500 mm.

- A. For detailed shots of a squirrel on a limb or Aunt Minnie atop a flagpole you would use lens No. —.
- B. To photograph the newly installed gas pump at Zeke's General Store you would use lens No. —.
- C. Or should you suddenly find yourself in the jug and want to take home some pictures of the inside of your cell, you'd get more by using lens No. —.

12. If you were using a shutter speed of 1/100 and a diaphragm opening of $f/4$, what other combinations give you the same density on your negative?

- A. 1/50 at $f/8$;
- B. 1/25 at $f/8$;
- C. 1/50 at $f/5.6$;
- D. 1/25 at $f/16$.

13. Just what do they mean when advertisers speak of "Depth of Field?"

- A. Depth or thickness of emulsion on film.
- B. Amount of top soil on a pasture.
- C. Three dimensional effects on prize prints.
- D. The distance between two points within which everything is in focus.
- E. The distance from camera lens to film plane.

14. What light-sensitive material did Daguerre use?

- A. Tin coated with mercury.
- B. Paper soaked with iodine.
- C. Copper coated with silver.
- D. Tin foil and bromide.

15. Well, finally we have to get down to essentials. Which of the following are NOT essential for the production of pictures?

- A. Acid hardener in the hypo.
- B. Sulphite in the developer.
- C. Antihalation dye in the film base.
- D. Silver salts in the contact paper.

16. Let's start off with a little variation of the true and false idea. This is a yes and no question.

- A. Does hypersensitization increase the graininess of negative material?
Yes. No.
- B. When a lens is focused sharply at, say, 6 feet, will the subject at that distance be sharper at $f/11$ than at $f/2$?
Yes. No.
- C. Is it dangerous to pour acid into water while stirring vigorously?
Yes. No.

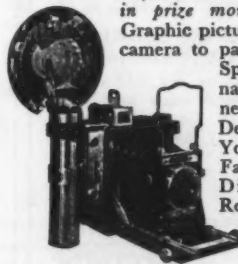
"Prize-Winning Pictures Practically Paid For My SPEED GRAPHIC"



A Prize-Winning Speed Graphic Picture by Forest J. Sorenson

THE above picture won a \$25 prize for Forest J. Sorenson, of Ames, Ia., in the most recent Synchro-Sunlight Contest. Another captured a \$100 first prize in Metro-Goldwyn-Mayer's National Candid Camera Contest. In

all, he has received more than \$140 in prize money from his Speed Graphic pictures! If you want your camera to pay for itself, choose a Speed Graphic. It's a natural born prize-winner! See it at your Dealer's or, when in New York for the World's Fair, at the new Graflex, Display Rooms, 50 Rockefeller Plaza. Four sizes: the $2\frac{1}{4} \times 3\frac{1}{4}$ Miniature and the $3\frac{1}{4} \times 4\frac{1}{4}$, 4×5 and 5×7 .



FREE! Send for our FREE catalog of ican-made, Graflex and Speed Graphic American-made, Prize-Winning Cameras and Accessories and for FREE $2\frac{1}{4} \times 3\frac{1}{4}$ Miniature Speed Graphic folder. Paste coupon—or write your request—on penny post card, if you wish. Folmer Graflex Corporation, Dept. MC-18, Rochester, N. Y., U. S. A.

FOLMER GRAFLEX CORPORATION
DEPT. MC-18, ROCHESTER, N. Y., U. S. A.

Please send me your free catalog of Graflex and Speed Graphic American-made, Prize-Winning Cameras and Accessories and free $2\frac{1}{4} \times 3\frac{1}{4}$ Miniature Speed Graphic folder.

NAME _____

ADDRESS _____

CITY _____

STATE _____



GRAFLEX Prize-Winning CAMERAS

SALE!

THE GEVIRETTE A HIGH GRADE MINIATURE CAMERA



\$24⁵⁰

FORMERLY \$36.50

It's one of the handiest of the fine miniature cameras — measures only 3½" x 2½" x 2¼", is compact and light weight, and has an all metal leather covered body.

**TAKES CLEAR, SHARP
PICTURES 1-3/16" x 1-9/16"**

making 16 pictures on No. 127 standard film. Equipped with fast F2.9 anastigmat lens in Compur Shutter with speeds up to 1/300th part of a second.

*While they last,
the special price is*
\$24.50

Eveready case
\$4.75

Mail Orders Filled. Write Dept. M. G. E.



Willoughbys

*World's Largest Exclusive Camera
Supply House*

110 West 32nd Street New York

- D. If the lens is shielded from direct light, can shots be made against the sun?
Yes. No.

Answers to KAMERA KWIZ

1. B. The everready case flap got in the way.
2. He used an ink printing process.
3. All the statements are correct.
4. Positive transparencies and chemical reversal methods.
5. Cable Release;
Swing back;
Visual extinction;
Turner-Reich;
Filter factor.
6. White vinegar.
7. Head on.
8. Yes, the short duration of the flash in the darkness would stop the motion.
9. Sure, click the shutter 25 times, but keep your camera steady on a tripod!
10. Red filter.
11. For A, use No. 3;
For B, use No. 1;
For C, use No. 2.
12. 1/25 at f/8;
1/50 at f/5.6.
13. The distance between two points in which everything is in focus.
14. Copper coated with silver.
15. A and C are not absolutely essential.
- 16: A. No;
B. No;
C. No;
D. Yes.

Roads to \$\$\$

(Continued from page 65)

duplicates.

Almost any subject has an advertising angle. A picture of a sturdy oak suggests the firm foundations of a business; a shot of an old watchmaker at work suggests craftsmanship; etc.

Newspapers are interested especially in pictures with a family angle, since their advertisers are aiming primarily at that group. The sales idea behind the picture is the thing that sells it. Study the advertisements in papers and magazines to discover what makes an arresting ad.

Then figure out some new ideas for your local newspaper. Here are some picture "germs" which may multiply into dollar ideas:

1. A prominent man or woman in your city reading and obviously enjoying

CONTEST CALENDAR

Open to	Subjects	Prizes	For copy of rules, write to	Contest closes
Anyone	Anything in animal kingdom	Five prizes, from \$2.50 to \$15	Photography Editor, National Asso. of Audubon Societies, 1006 Fifth Avenue, New York City	Sept. 1
Anyone	Pictures of Kansas: Industrial, Scenic and Agricultural	Grand prize, \$50; \$25 for best picture in each of three divisions	Dept. of Information, Kansas Industrial Development Commission, State House, Topeka, Kansas	Sept. 1
Amateurs	Letter, 100 words or less: "Ideal Type of Miniature Camera"	Five prizes, Perflex; forty-four cameras and accessories	Candid Camera Corp. of America, 844 W. Adams St., Chicago, Illinois	Sept. 15
Anyone	Pictures taken in or of the Elgin Building at the New York World's Fair	Ten 17-jewel watches per month, through Sept.	Elgin Company, Elgin, Illinois	Sept. 30
Anyone	Pictures of people laughing at the Ronson Laughing Manikin at New York World's Fair	Three monthly prizes: 1st, \$25; 2nd, \$15; 3rd, \$10	Art Metal Works, Inc., Constitution Mall, World's Fair, New York City	
Anyone	Pictures taken anywhere in France	First prize, \$200; 2nd, \$75; 3rd, \$50; ten \$10 prizes	French Government Tourist Bureau, 61 Fifth Ave., New York City	Dec. 31

- the paper. Caption: "Mayor Jones Enjoys the Journal—So Will You!"
- A picture of a family group gathered around while one parent reads from the paper. Caption: "It Meets the Needs of the Whole Family."
 - A smiling woman carrying packages. Caption: "Each One a Bargain—Bought Through Journal Ads."
 - Grandfather working a puzzle while

LIKE AN EXTRA HAND IN THE DARK ROOM . . .



ACCRATIMER

\$8.95

Stop worrying about timing your enlargements. ACCRATIMER does it for you . . . turns off your enlarger at any pre-selected time up to one minute. Leaves both hands free for other dark-room jobs. Minimizes danger of vibration through handling enlarger switch. ACCRATIMER saves so much time and trouble it's like having an extra hand in the dark-room.

BRITISH MADE DALLMEYER . . . TELEPHOTO LENSES KINE AND V. P. EXAKTA

Typical of the range of these fine British made lenses are the 6" Dallon Tele-anastigmat f/5.6 for the Kine Exakta at \$70, or for the V. P. Exakta at \$46.

Write for literature describing other moderately-priced Dallmeyer lenses for leading makes of 16mm. and 8mm. cine cameras as well as most interchangeable-lens still cameras.

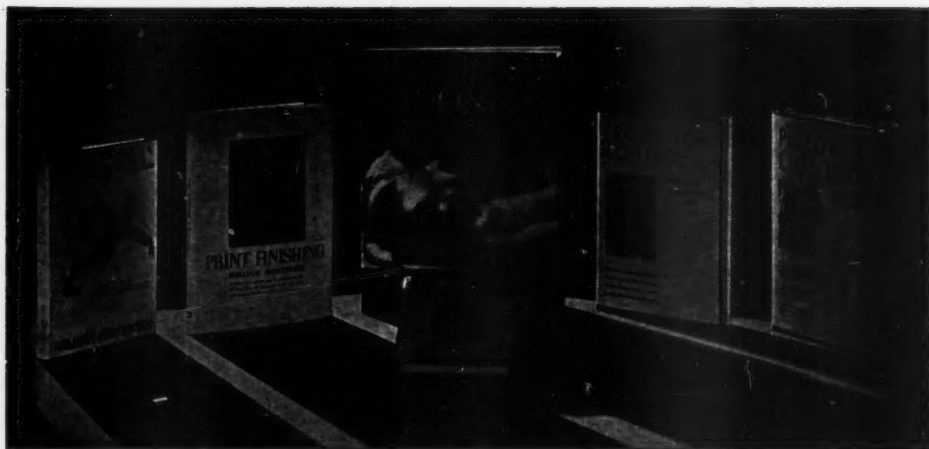
ACCRATIMER and LENSES at your dealer or direct from

MEDO

15 WEST 47TH STREET

NEW YORK CITY





BY THE GREATEST PHOTOGRAPHIC AUTHOR AND ARTIST OF TODAY

WILLIAM MORTENSEN

PRINT FINISHING

deals with a critical but neglected stage of print making. It takes the print from the wash-water to the salon wall. For the first time in his books, Mr. Mortensen describes his amazing method for print control, the Abrasion-Tone Process. At last, the photographer is enabled to alter or eliminate blemishes without resorting to negative retouching.....

\$2.50

PICTORIAL LIGHTING

will simplify your lighting problems in two important ways: Simplified in execution, the author explains clearly and simply just how his famous lightings are made. Simplified by low costs, for only two inexpensive lighting units are used and these are well within the reach of the most modest purse. Profusely illustrated with diagrams giving exact measurements for lighting set-ups.....

\$2.00

THE COMMAND TO LOOK

A Formula for Picture Success, in which the master pictorialist sheds new light on the art of picture making. He presents a revolutionary approach to the secret of making effective pictures and a startling introduction to the problems of composition, based on a single, workable formula. 55 illustrations of Mortensen's best work, with a cover in full color. Beautifully bound in white plastic.....

\$2.00

PROJECTION CONTROL

is concerned primarily with describing the four methods the author uses to control the image during projection: framing; local printing and "dodging in"; alteration or distortion; and combination printing and montage. They enable the photographer to greatly enhance the pictorial effectiveness of his pictures. Also invaluable sections on equipment, exposure and developing technique.....

\$1.75

MONSTERS & MADONNAS

One of the most unusual photographic books ever published . . . this book has two purposes. First, it presents 20 beautiful photogravure reproductions of Mortensen's work, 9x12 inches in size, prepared so that they may be easily removed for framing without damaging the book. Secondly, accompanying each picture is a complete exposition of the methods used in producing the print and the artistic principles involved.....

\$4.00

THE MODEL

A Book on the Problems of Posing. A thoroughly complete treatise on the posing and directing of models. The problems connected with the posing of every part of the figure are exhaustively studied and finally brought together for the completed pose. Arrangement of the hair and of clothes are also thoroughly studied. 272 pages and 268 especially prepared illustrations.....

\$3.00

MINICAM

22 EAST 12TH STREET

CINCINNATI, OHIO

a child reads the comics. Caption: "From Eight to Eighty—It Meets Our Readers' Needs."

5. Picture of a child walking with a nurse, his nose in the air while two other children look on. Caption: "He's Gone Snooty On Us Since He Got That Nurse Through The Help Wanted Columns."

Pictures must be needle sharp, the detail should be crisp and clear. Newspapers use 65-screen halftones which means that as much as 20 per cent of the detail in the pictures may be lost in reproduction. Watch the lighting for good contrast and don't go arty with exceptionally high or low-key prints. Make enlargements of sufficient size to allow an artist to work on them if necessary.

Visit your local newspaper and have a talk with the man who handles promotion. Discuss your ideas with him, and get his. If there are two or more newspapers in town, deal with one—they'll appreciate it and be more willing to work with you.

Camera Behind the Lines

(Continued from page 42)

in comparison with the big view cameras used by many of the press cameramen working in the vicinity.

For two weeks, among the frightened humans who poured over the Pyrenees from Spain, I gave up shaving, dressed as drably as the refugees, and spent the days sauntering among small groups of individuals. I pretended no more than casual notice of anyone and was rewarded with an equal amount of indifference. Often a helping hand extended to someone eased my task as well as their pain. After such an incident I could linger for a while without drawing hostile glances.

The men would talk in groups. They smoked my cigarettes and called me "compadre." I was permitted to go and do as I liked.

I used photos as often as possible, as a means of introducing a pictorial note. Failing this, I darkened the sky to at least a neutral tone to avoid that altogether too common white, dreary expanse typifying most news shots.

Guaranteed BARGAINS BY AN **AUTHORIZED DEALER**

Leica Model G, Summar F2, eveready case...	\$118.00
Leica Model IIIb, Summar F2, eveready case	145.00
Leica Model F, Summar F2, eveready case...	96.00
Contax Model I, Sonnar F2, eveready case...	99.50
Contax Model II, Sonnar F2, eveready case...	135.00
Contax Model III, Sonnar F1.5, eveready case	175.00
Contaflex, Sonnar F1.5, eveready case.....	195.00
Kine Exakta, Zeiss Tessar F3.5, eveready case	117.50
Kine Exakta, Exakter F3.5, eveready case...	96.00
Kine Exakta, Biotar F2, eveready case.....	210.00
National Graflex, Ser. II, B & L Tessar F3.5	52.50
Kodak Retina II, Sch. Xenon F2.....	89.50
Speed Graphic 24x34, Carl Zeiss Tessar F3.5	108.00
Speed Graphic 34x44, Carl Zeiss Tessar F4.5	94.50
Robot I, Carl Zeiss Tessar F2.8.....	78.00
Robot II, Carl Zeiss Biotar F2.....	137.50
Bantam Special, Ektar F2.....	49.50
Maximar A, Zeiss Tessar F4.5.....	49.50
Rolleicord Ia, Zeiss Triotar F4.5.....	39.50
Rolleicord IIa, Zeiss Triotar F3.5.....	54.50
Bergheil 24x34, Heilar F3.5.....	39.50
Bergheil 24x34, Skopar F4.5.....	37.50
Avus 24x34, Skopar F4.5.....	29.50
Korelle Reflex II, Zeiss Tessar F2.8.....	97.50
Korelle Reflex II, Radionar F2.9.....	77.00
Super Ikonta B, Zeiss Tessar F2.8.....	82.50
Latest Super Ikonta B, Carl Zeiss Tessar F2.8	96.50
Exakta B, Zeiss Tessar F3.5. New.....	77.50
Exakta B, Exakter F3.5. New.....	67.50

Simmon Omega B, no lens.....	45.00
Simmon Omega B, Wollensak F4.5.....	57.50
Super Multiflex, Benar F4.5.....	64.50
Laborant 9x12, Benar F4.5.....	94.50
Valoy Enlarger, no lens.....	37.50
Pocomat Enlarger, no lens.....	94.50
Pocomat IIa, 95mm. F4 lens.....	198.00

Bell & Howell Model 134E, F2.5.....	59.50
Bolex 8, Kino Plasmast F1.5.....	194.50
Kodak 60, F1.9 Anastigmat.....	49.50
Kodak 25, F2.7 Anastigmat.....	32.00
Keystone K8, F2.7 Anastigmat.....	34.00
Keystone K8, F1.9 Anastigmat.....	40.00
Bolex 16, Leitz Hektor F1.4 Anastigmat.....	210.00
Cine Kodak Magazine, F1.9 Anastigmat.....	94.50
Cine Kodak K, F1.9 Anastigmat.....	64.50
Keystone A7, F1.5, seven speeds.....	50.00
Keystone A7, F2.7, seven speeds.....	32.50
Bell & Howell 70DA, Taylor Hobson Cooke F1.5	185.00
Bell & Howell 70DA, Taylor Hobson Cooke F1.5	185.00
Bell & Howell JJ, 750-Watt, F1.6.....	149.50
Keystone A81, 750-Watt, F1.6.....	52.50
Keystone A75, 500-Watt, F2.5.....	40.00
Kodascope G, 750-Watt, F1.6.....	90.00
Kodascope 8 Model 50, 300-Watt.....	30.00
Keystone Model R8, 500-Watt.....	40.00
Keystone Model M8, 300-Watt.....	29.50
Bell & Howell Model 122A, 500-Watt.....	80.50

EASY TERMS ARRANGED

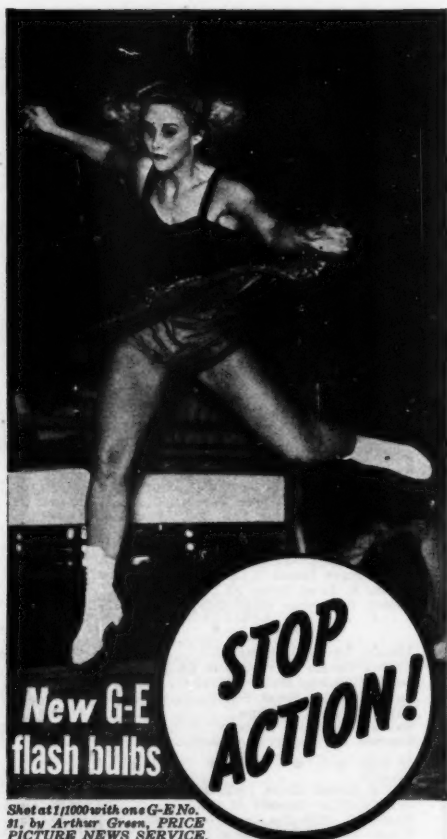
Write for new Fall Bargain List



All Bargain offerings, while used, are in equal to new condition and sold under our "10 DAY TRIAL" money back guarantee.

WRITE OR CALL FOR BARGAIN LIST 729

HABER & FINK INC.
16 WARREN ST. NEW YORK



New G-E flash bulbs

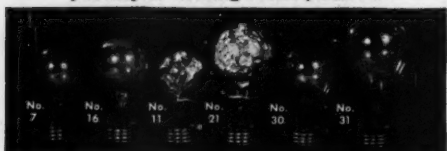
STOP ACTION!

Shot at 1/1000 with one G-E No. 31, by Arthur Green. PRICE PICTURE NEWS SERVICE.

Out of a "whirling Dervish" spin with a leap... that's fast action. Yet G-E's new Focal Plane photoflash lamp and a 1/1000 stopped it.

If you want to stop action with any camera, the new G-E Flash bulbs are your answer. Unexcelled uniformity in timing. Safety-jacketed bulbs. And a type for every need. For high speed action, new G-E Focal Plane No. 30 and No. 31. For general service, new G-E Synchro-Press No. 16, No. 7 and No. 11. And for extra covering power, new G-E Synchro-Press No. 21.

If you haven't tried a G-E flash bulb lately, you may be missing better pictures.



filled with aluminum FOR BRIGHTER, WHITER LIGHT

GENERAL ELECTRIC
MAZDA PHOTOFLASH LAMPS

Those two weeks in the South of France provided human interest and enough horrors to fill a Pandora's box. My heart, I discovered, was not as objective as my head. Toward the last few days of my two weeks stay, the pathetic cases about me had their effect. The last day I could not even steal my pictures. I left hurriedly for more picturesque regions. But my minicam had made a significant human document.

Photo-Finish

(Continued from page 25)

The first serious attempt to photograph the finish of a race was made in 1936. A Speed Graphic was rigged up with an electric beam to trip the shutter. The leading horse interrupted the beam and snapped the picture. Exposure was 1/1000th second at f/2.8 on superpan film. Another camera was set up in the same manner to get the second and third horses. The following ponies wouldn't show, however, unless they were far enough behind the winner to allow the beam to open for the second camera. This seldom happened.

A specially constructed movie camera was then tried. It made direct positives 2x3 inches on a paper rated about 14 degrees American Scheiner. The camera turned 50 frames a second, used an f/2.8 Tessar and had a rotating metal shutter. The direct positive idea speeded

up the procedure — a picture could be turned out in 3 or 4 minutes—but the paper was too slow for dull days.

The next year a standard DeVry 35mm. motion picture camera with an f/1.9 lens was tried. This was speeded up to 80 frames a second with an exposure of 1/175th at f/4. Plenachrome film was used on bright days and Superpan when it was cloudy. The pictures were fine but it took five minutes to get shots to the judges.

Jack Thomas, ace photo-finish shooter, solved the problem. After combing the world for a high speed motion



PICTURES ARE made from the small, light-tight room on the top of this 45' photo finish tower at Lincoln Field Race Track, Crest, Ill. Fig. 3.

picture camera, he found a French machine

SALONS TO ENTER

Closing Date	Name of Salon	Number of Prints and Entry Fee		For Entry Blank, Write to
August 30	London Salon of Photography	Any number of prints, fee, 5s.		The Hon. Secretary, The London Salon of Photography, 26-27, Conduit Street, New Bond Street, London, W. 1.
September 8	Third Indian International Salon of Photographic Art	4 slides	\$1.25 \$0.50	Mr. N. B. Cooper, A.R.P.S., Honorary Secretary, Camera Pictorialists of Bombay, 243, Hornby Road, Fort, Bombay, India
September 18	Atlanta National Amateur Salon	4	\$1.00	C. S. Minglehoff, 252 Peachtree St., N. W., Atlanta, Ga.
October 2	New York Salon of Photography	4	\$1.00	Salon Committee, The Camera Club, 121 West 68th Street, New York City
October 16	Fifth Annual National Philadelphia Salon of the Miniature Camera	4	\$1.00	Charles Heller, Salon Chairman, Architects Building, 17th and Sansom Sts., Philadelphia, Pa.

made by DeBrie which normally turns over at 240 frames a second. He geared it up to 360. A 2-inch, f1.5 Hugo Meyer Plasmat lens gave plenty of speed when the center of the track is less than 110 feet from his machine. At some tracks the distance is greater. At 165 feet, a lens of 3½ inch focal length is used.

Getting a motor to drive the geared up camera was a problem. The ordinary types lacked the necessary power. Finally Thomas hooked up an automobile starting motor. A friction clutch was built in as a safety device,

to prevent the motor from grinding everything to pieces if the camera jams.

Exposure calculations are made with a Weston meter. The rotating metal shutter has a variable slit so that the exposure time can be altered without changing the speed of the machine. Shooting can be done at 1/1000th of a second at f8 on bright days and at f4 or f3.5 when it is dull. The slowest shutter speed used is 1/600th second, but with Agfa Superpan film, this much time is rarely needed.

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finity, the two inch lens is wire-sharp from 40 feet and the 3 1/4 inch lens almost as close. The nearest horse is always more than 35 feet away and the lenses are seldom used wide open, so the entire field is always in focus.

The camera is bolted to a surveyed finish line in the loft above the judges' stand. This space, which is available at all tracks, is made light tight with the exception of a small observation peephole which is opened to note the proximity of the horses. As they draw near, the camera is started and the exposed film feeds directly into a pan of developer.

In ten seconds the film is developed. In another 25 seconds it is hardened, fixed and rinsed. Then the wet strip is put into the enlarger so the frames depicting the winner and second and third horses may be selected and blown up to 8x10 inches on Press Bromide. The paper develops almost instantly and in about eight seconds is fixed, rinsed and enroute to the judges. With all the lost motion that is unavoidable, the entire procedure occupies less than 90 seconds. On occasion, it can be performed in a minute flat.

The lantern slides, 3 1/4 x 4 inches, are made on the same enlarger but more time for processing is needed. In four minutes the slide is finished and is thrown on a through vision screen with a 500 watt Bausch & Lomb projector.

The white line appearing on all finish pictures is a light cord stretched tightly from above the camera to the board on the inner rail of the track. This is exactly on the surveyed finish line, and bisects the picture, indicating clearly the winning horse. The picture also includes the sign showing the name of the track, the number of the race and the date. These pictures therefore are a valuable record for the racing association's files.

Photographic Blessed Event

(Continued from page 74)

three-hour-old daughter through the open nursery door in the arms of a nurse. This picture was not satisfactory because she was too young.

When the baby was four days old, I took several more flash pictures and secured one which caught a good expression. The negative was Super-Plenachrome developed in Champ-lin 15.

A contrasty enlargement on glossy paper was made of a portion of the negative. This circular print (Fig. 1) was mounted on a piece of white gloss cardboard 10 by 12 inches. The lettering was put on the cardboard in pencil and traced with India ink. Pencil guide lines which could be erased afterwards were used.

The completed page was copied, using the Leica with 90 mm. lens at 3 3/4 feet. The negative material was Fine Grain Plenachrome

developed in D-72 for contrast. Several exposures over and under the Weston reading were made and it was found that over-exposure gave a contrasty negative. Both negatives were now ready.

Since the announcement was to consist of an 8 by 10-inch sheet folded into quarters, it was necessary to use a paper which would fold without cracking the emulsion, such as Defender AL Velour Black.

After determining the position of each negative and masking it, the job was routine. Either negative was inserted in the enlarger first and a number of sheets exposed. After removal from the easel the sheets were piled with the exposed portion in the same position.

When twenty sheets had been exposed, the negatives were changed, the opposite corner was exposed and development begun. Don't rush this part of the job. When dry, the announcements, Fig. 3, were folded in a French fold as indicated by the dotted lines.

Being Critical

(Continued from page 67)

quite enough interest in the picture. It would make a good background for an informal portrait of someone leaning against the rail.

The center of interest both from the point of view of placement and because of its light tone is the white space near the lower right corner. The eyes are led to this point and there we find nothing. To put some small object here would not solve the problem, for it would not fill the area sufficiently to justify so much background area. It would take a model to solve the problem. Why not try the same shot using a child looking over the rail or climbing over it?

Fire Alarm for Lensmen

(Continued from page 55)

posure, time when exposed, and a rough diagram of his position in relation to the burning building.

A set of prints should be made up as soon after the fire as possible and left at the office of the fire chief. There the insurance investigator can see them as well as the firemen and the owner of the property. All of these people are prospective customers.

Postcard size, glossy prints are usually satisfactory. If greater enlargements are needed the insurance firm will order them later.

Bass Bargaingram

Vol 29, No. 8

AUGUST, 1939

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voluminously, and burns the midnight mazda on manuscripts which when re-typed are found to be his famous BARGAINGRAMS. Each issue represents miles and miles of marching up and down his aisles and along his shelves gleaming information with note book in hand. The results: Several issues each year devoted to bargains in CINE and STILL equipment. They are FREE for the asking . . . merely state your preference and mention Dept. M. M.

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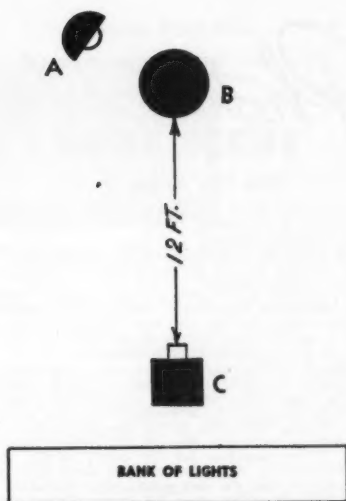


DIAGRAM of a typical lighting arrangement for a Dorothy Wilding portrait. B, the subject. A bank of lights is placed behind and above the camera "C." "A" is a diffused 500 watt mazda bulb in a reflector for backlighting.

ing, substitute a weak light for the reflector. Finally experiment with a concealed light trained on the background.

"So far," she explained, "the only lighting I've discovered which presents the human head without distortion is the forty-five degree type. I believe also in using a bank of lights above and immediately behind the camera, which, if properly diffused, takes the place of a sky-light."

Miss Wilding likes to show how, after turning on this soft bank of lights, she high-lights the face with a five hundred watt mazda lamp, also diffused, placed close to the model. She uses a studio camera equipped with a Goertz Hypar lens.

When I examined her negatives which were made on a fast orthochromatic film I was astounded by the high lights. Miss Wilding explained that many photographers lose these high lights because they permit their subjects, particularly women, to "powder down" too much. The natural oil in skin aids the photographer greatly in avoiding flat pictures. If I had not seen Miss Wilding's negatives, I should always have been under the impression that the brilliant high lights which characterize her pictures were introduced by retouching.

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Photography

TRADE NEWS

New Film Rating Sheet

A new method of emulsion rating is inaugurated in the Weston Film Rating Sheet which is now available at photographic dealers.

Each emulsion is given a group number which will enable the film user to adjust the emulsion rating of the film to his own purposes.

For example, Agfa Superpan Press is given a daylight group number of Weston 100. This is the recommended emulsion rating for this film but the speed range of it is 80 to 125 so that for Superpan Press an emulsion rating of 80, or 100, or 125 may be used.

Accepted development practices vary considerably and it is chiefly to allow for the use of various developers that the group rating system is used. If Agfa Superpan Press film, for example, is employed the user starts out with a Weston 100 rating for his film but he can change it to Weston 80 if his negatives are thin or lacking in detail. If his negatives are too dense, he can change it to Weston 125. Once he has determined which emulsion rating to use, the user continues it thereafter.

The following table shows the group number and the three emulsion speeds which it represents.

Daylight		Group Number
Speed Range		
80-100-125		100
40- 50- 64		50
20- 24- 32		24
Tungsten		Group Number
Speed Range		
50-64-80		64
24-32-40		32
12-16-20		16
6- 8-10		8

WESTON EMULSION RATING VALUES FOR ROLL FILM AND PACKS

Daylight Group No.	Agfa	Tungsten Group No.
100	Superpan Press	64
50T	Super Plenachrome	32T
24	Finopan	16
	Plenachrome	16
	Eastman	
100	Super XX	64
24	Verichrome	16
24	Panatomic X	16
35MM. FILMS		
	Agfa	
100	Ultra Speed Pan	64
50	Superpan Supreme	32
24	F. G. Plenachrome	8
24	Finopan	16
24	F. G. Rev. Superpan	16
	Eastman	
100	Super XX	64
50	Plus X	32
24	Super X	16
24	Panatomic X	16
24	Panatomic	16

COLOR FILMS

Since color film must be processed under carefully controlled conditions and, also, since exposure must be exact in order to obtain proper color rendition, color film is rated in single numbers only and not in blocks.

Kodachrome		Daylight	Artificial
Roll Film			
8, 16, 35mm. Regular		8	3*
8, 16, 35mm. Type A		8*	12
*With filter.			
Dufaycolor		Daylight	Artificial
Roll Film			
Daylight (no filter)		6	—
Daylight (with daylight green filter)		6	—
Photoflood or Photoflash (1A filter)		—	3
Mazda (1B filter)		—	2

Speedo Print Dryer



A new improved Speedo Print Dryer model (\$14.85) dries glossies with regular matte or semi-matte prints. It has an all metal cabinet, crackle finish, and insulated bakelite handles.

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Hi-Lite Intensifier increases the light output of ordinary electric lamps, so that they may be used for making photographs at night, indoors, etc. The equipment includes two lamp standards with rubber covered hooks for attaching to backs of chairs, etc. Turn switch to low or medium while posing picture. Reflector may be adjusted to desired position by means of the swivel-joints on each lamp. Turn switch to high while making the exposure.

Hi-Lite has capacity for four standard 100 watt lighting bulbs; two 100 watt bulbs are recommended for average night pictures. Hi-Lite operates from 110 volts, 60 cycle A. C. only. For further information, write Hi-Lite Unit Company, 430 South Green Street, Chicago, Ill.

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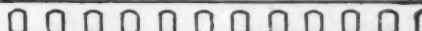
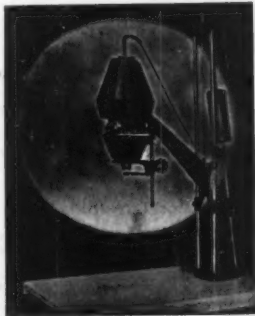
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This enables one to correct faulty perspective or distortion in portraits, architectural and similar photographs, after the negative has been made. It also makes simple the addition of distortion to a picture for purposes of exaggeration and emphasis.

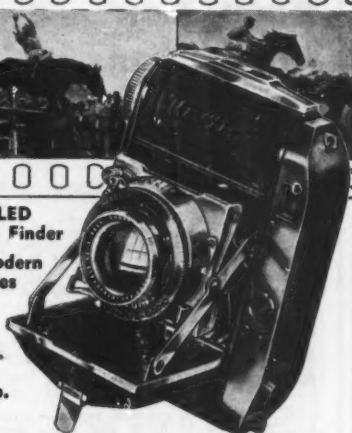
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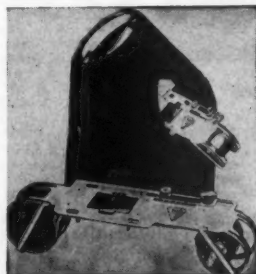
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For further information, write C. R. Skinner Manufacturing Co., 290 Turk St., San Francisco, Calif.

For 35 mm. Film Inspection



The "Filmorator," (\$3.00) for use with the Bausch & Lomb Film Slide Viewer, is designed to facilitate the study of 35mm. strip film negatives or positives. A button moves the film exactly one frame at a time. By using the Filmorator, it is easy to determine whether contrast, composition, definition, etc. make a negative worth enlargement in whole or in part. The film

may be examined indefinitely, even left in the viewer for days, since the heat nowhere approaches that of a projector.

Filing System

Jacobs Perfect File for negatives is a practical, convenient and well constructed product for filing negatives, 35 mm. to 4x5" inclusive. A parchment envelope, which opens on all four sides, is wrapped tightly around the film, protecting the latter against dust and rubbing or scratching; this parchment envelope is then put into a larger heavy duty envelope. Several styles of files are furnished, each containing 100 index cards, 100 heavy duty envelopes, and 100 parchment inserts. Index cards have space for recording remarks and data of exposure, light conditions, description of subject, etc. The 35 mm. file will permit the filing of 6,000 to 7,000 pictures. Other styles can be divided into two or three compartments to take negatives of different sizes.

The Jacobs Field Book is a companion product for the Jacobs Perfect File. This field book has soft covers, making it easy to carry, and contains duplicates of the index card data so one may enter desired information when the picture is taken, providing an accurate reference when filing the negatives. Jacobs Perfect Filing Systems, 4571 Kings Highway, Brooklyn, N. Y.

Imperial Exposure Meter

THE IMPERIAL exposure meter is a new American-made visual exposure meter which employs an extinction wedge designed to compensate the peculiarities of human vision. Wedges which have their intensities changing according to some regular system are photographically correct but they are not always visually accurate. This is because there is a natural accommodation of the eye to difficult vision that has to be considered, as well as the differing sensitivities of the eye under conditions of bright and dim light. The Imperial compensates for these natural reactions. It employs a supplementary wedge which can be thrown into the optical path or removed from it by a turn of a knob.

This new meter at \$1.50 will be available through the regular photographic stores or complete information may be had by writing to Chess-United Co., Emmet Building, Madison Ave., at 29th Street, N. Y. City.

The Imperial Precision Enlarging Easel, \$10.95, is now available for immediate delivery by the Chess-United Company.

Lerochrome Color Camera

The Lerochrome one-shot color camera now is manufactured and distributed by the National Photocolor Corporation, 480 Lexington Ave., New York City.

The Service Department offers assistance in meeting unusual requirements, and a staff of research scientists test new developments in cameras and processes before offering them to the amateur or professional photographer. The present line of Lerochrome Cameras is the product of extensive engineering development.

Exposure Meter Instruction Book

The new DeJur-Amsco instruction book is one of the most complete instruction booklets for the use of exposure meters. It tells how to use an exposure meter, how to determine correct exposure, how to determine differential exposure. This latter is the technique employed when there are bright highlights and dense shadows in the subject. Correct exposure then is that for a gray midway between black and white and is obtained by measuring both the lightest and darkest parts of the subject.

Included is a list of pointers for the exposure of photographs indoors, correcting for filters and color film. Copies are obtainable from DeJur-Amsco Corp., Shelton, Connecticut.

Deluxe Outfit for Beginners

A deluxe darkroom outfit now provides all the essential materials for developing and contact printing. Included are a new Agfa masking print-frame, a new Agfa Safelight with bulb and filters for use when handling paper or film, and a copy of the popular 60-page, illustrated book, "Developing and Printing Made Easy."



Also in the new outfit are: three 5 x 7 steel trays finished with white, acid-resisting enamel, one dozen-sheet package of 4 x 6 Convira paper, one 2-oz. bottle of Rodinal developer, five M-CO developer tubes, one 1/2-gal. size can of Agfa Acid Hypo, one 8-oz. footed glass graduate, one 10" stirring rod, one stainless steel thermometer, two stainless steel film clips, one 4" print roller, four 12 x 12" blotters for drying dull-surfaced prints and one 10 x 12" ferrotype tin for drying glossy prints.

The new Deluxe Darkroom Outfit is made by Agfa Ansco Corporation in Binghamton, New York, and retails at \$9.75.

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 NATIONAL GRAFLEX, List \$87.50... \$60.50
 KORELLE REFLEX, F3.5, Vitar - 1/500th, List \$70.00... \$49.95
 MINIATURE SPEED "GRAPHIC", Kalart range finder, speed flash, case, F4.5 Kodak Anastigmat, List \$143.50... \$110.00
 SUPER IKONTA D, F2.8 Tessar, List \$100.00... \$108.00
 IKONTA C SPECIAL, F4.5 Tessar, Compur, 1/400 sec. List \$80.00... \$43.95
 ROLLEIFLEX, Automatic, case, F4.5 Zeiss Tessar, 4x5 CROWN VIEW CAMERA, without lens, case, List \$57.50... \$44.50
 LEICA III B, F3.5 Summar, close eyepiece... \$138.00
 SUPER IKONTA D, F4.5 Tessar, coupled range finder, List \$104.00... \$78.00
 IKONTA A SPECIAL, F3.8 Tessar, Compur, 1/500 sec. List \$73.00... \$33.95
 31x44 GRAFLEX Series D, F4.5 Zeiss Tessar, 15cm. List \$141.00... \$106.00
 VOIGTLANDER FOCUSING BRILLIANT, F3.5, Voigt, Compur, List \$48.50... \$27.95
 CINE KODAK K, 16mm, F1.9, case, List \$93.50... \$68.00
 CINE KODAK E, F3.5, 16mm, List \$39.50... \$31.50
 KEYSTONE A-7, 16mm, F2.7, List \$44.50... \$35.50
 KODASCOPE EE Projector, 16mm, F1.6 lens... \$47.50
 55mm, LEICA lens, F3.5 Elmar wide angle, List \$57.00... \$42.00
 73mm, LEICA lens, F1.9 Hektor telephoto, spec. sun shade, List \$180.00... \$95.50
 90mm, LEICA lens, F4 Elmar telephoto, List \$75.00... \$55.50
 135mm, LEICA lens, F4.5 Hektor telephoto, List \$114.00... \$78.50
 LEICA TIDON, universal view finder, chrome, List \$27.00... \$19.95
 85mm, CONTAX lens, F2.8 Sonnar telephoto, List \$213.00... \$130.00
 135mm, CONTAX lens, F4 Sonnar telephoto, List \$120.00... \$89.50
 OMEGA B Enlarger, List \$65.00... \$44.50
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Here is a Super Value made possible by quantity production and selling only direct to the user. This model is of almost unlimited capacity. Its lever locking, vibration proof upper assembly is second to none in rigidity. 48" upright gives 13 linear diameters enlargement on worktable; 22 on the floor; 4 1/2" diameter first quality ground and polished condensers give intense, even illumination for any size prints; opal glass may also be used. High-low light control, for matching light to dense or thin negatives; "on" and "off" foot switch, leaves both hands free for "dodging" the print. Micro focusing screw mount, 1/4" up and down movement per turn; dustless metal negative carrier (no glass used or necessary) for cut or uncut film. Will perform alongside of any 2 1/4 x 3 1/4 enlarger, irrespective of price. \$37.50 delivered.

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Adams School of Photography

The Adams Institute announces the opening of a New School in Photography under the personal direction and instruction of Dr. Richard Bettini, Dean of the School,



whose family has been associated with the art of photography for several generations. Incorporating up-to-date methods of photographic instruction, the school occupies quarters at 6

East 39th Street, New York City. One of its features is an unusually large darkroom, equipped with eighteen enlargers as well as modern aids for the developing and printing of pictures.

While the course of instruction will appeal to the amateur who has only a fundamental knowledge of photography, or to a person who is about to buy a camera and wants to learn how to get the most out of it, the Adams Institute plans to cater to those who desire seriously to study photography. Three sessions daily—morning, afternoon and evening. Each session conducted for four hours, over a period of two weeks.



Handy-Pod

Handy-Pod (\$1), a camera steadying handle manufactured by the Livingston Sales Co., Poquonock, Conn., is pocket size and threads into the camera tripod socket. The Handy-Pod makes for camera steadiness, assuring sharper pictures and allowing longer exposures, and easy manipulation of the camera, as one hand is left entirely free for focusing, winding the film, adjusting shutter, etc.

AGFA Universal Safelight

A new universal safelight outfit with interchangeable safelight filters has just been introduced by Agfa Ansco Corp. The complete set includes a black enamelled Agfa Safelight Lamp, Agfa A-3 Green Safelight Filter, Agfa A-7 Red Safelight Filter and a 10-watt Yellow Bulb. Used in the lamp without a filter, the yellow bulb provides safelight illumination for contact printing papers such as Convira. With the red filter, the safelight may be used for Plenachrome and other orthochromatic films. When developing panchromatic films, except those which require development in total darkness, the yellow bulb and the green filter assure safe, indirect darkroom illumination.

The lamp (price, \$1.95) fits any standard electric outlet and may be screwed into either a wall socket or drop cord outlet. Because of its compact and convenient form, the safelight may be moved about and placed in positions impossible with a larger type lamp.

A new 1-gallon size (2-pound) container of Agfa Acid Hypo has been announced, price 45 cents.

Flood "Hi-Lo" Switch

A photo-flood control switch, just introduced by the Lafayette Camera Corporation, 100 Sixth Ave., New York City, is capable of controlling a group of two, three or four lamps drawing total power up to 2400 watts. The unit consists of a steel box four inches square by two inches high, with a toggle switch lever on the top, a pair of outlets on each of two sides, and a rubber-covered, heavy-duty line cord. With the switch in the "Hi" position, the photo-floods plugged in burn at normal brilliancy; in the "Lo" position the illumination is dimmed, reducing the current drain and the heating. Lamp life and comfort of both photographer and subject are increased.

New Miniature Enlarger

The new Falck enlarger (\$70, without lens), just announced by the Advance Electric Co., features the same type of focusing mechanism used in microscopes, a special type safe-light (which accommodates filters for color separation) and a new design in lamp house construction. The entire lamp house may be turned completely to one side of the carriage, allowing an unobstructed view of the negative carrier and film, and also providing greater ease in arranging composition.

It employs the double condenser illuminating system, 75-watt pre-focused lamp, with a brilliantly polished reflector and an opal diffusing glass. Takes negatives $2\frac{1}{4} \times 2\frac{1}{4}$ and smaller.

For further information and literature, write 1260 West 2nd Street, Los Angeles, Calif.

Photographic Mounts

Photographic mounts now are offered through retail stores by Gross Photo Supply Company, 1501-17 W. Bancroft St., Toledo, Ohio. A selected assortment of Gross Photo Mounts specially made to meet amateur requirements is now being offered. If your local dealer cannot supply you, a sample assortment of mounts will be sent direct from the factory for \$1 postpaid. A circular listing mounts most generally used in amateur work is available free. Ask for Circular B-49.

Dufaycolor Prints

Prices for color prints from Dufaycolor transparencies now are:

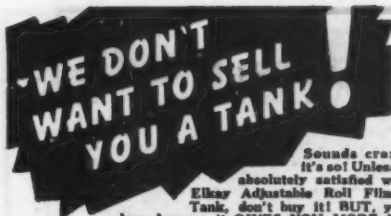
Picture Size	Contact Prints	
	First Print	Duplicate Prints
$1\frac{1}{4} \times 2\frac{1}{4}$	.50	.30
$2\frac{1}{4} \times 2\frac{1}{4}$	.50	.30
$2\frac{1}{4} \times 3\frac{1}{4}$	.65	.35
$2\frac{1}{2} \times 4\frac{1}{4}$	.85	.40
$3\frac{1}{4} \times 4\frac{1}{4}$	.90	.45
$9 \times 12\text{cm}$	1.10	.55
4×5	1.90	.85
5×7	2.50	1.00
8×10	4.00	1.90

Enlargements	
First Print	Duplicate Prints
2.00	.75
3.00	1.25
3.75	1.75
5.00	2.00

RFD Developer



RFD Finegrain Developer is available in 16 oz. and 32 oz. sizes. Each unit contains a bottle of developer and a bottle of replenisher of equal size. The 16-oz unit consists of a 16 oz. bottle of developer and a 16 oz. bottle of replenisher complete for \$1.00. For more complete details see your local dealer, or write to Walden Research Laboratories, 155 West 46th St., New York City.



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V. P. ERNEMANN, Ernobar F:4.5, 1/1000th.....	USED 34.50
CONTAX II, F:2, Meters, everready case, used.....	253.00 168.50
4x5 CROWN VIEW, F:4.5, 15cm. Compur, case and holder.....	125.00 92.50
VOIGTLANDER BESSA, F:3.5, Compur Rapid to 1/400th.....	50.00 32.50
SOLAR ENLARGER, 2 1/4 x 2 1/4, F:4.5, 3" like new.....	49.50 36.50
2 1/4 x 2 1/4 ALTI-FLEX, F:3.5, Compur, reflex focusing, 12 pictures on No. 120, everready case.....	52.50 34.75
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ROLLEICORD, latest model, F:4.5, compur, everready case, like new.....	64.00 47.50
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Robot Daylight Loader

The new Robot Film Rewinder consists of a chamber made of plastic material and permits transferring film into the magazine of the Robot II, and vice versa, in daylight. It takes any type of film wound on any standard 35 mm. cartridge, including Kodachrome.

This "Rewinder" also serves as a carrying case for two loaded spare magazines, sufficient for 100 Robot pictures, and is small enough to be carried in a vest pocket or lady's handbag.

Cinea Film Splicer

The new Cinea film splicer is constructed of metal throughout and automatically assures accuracy of alignment and spacing. Splices and mends properly made break elsewhere.

Sixteen mm. sound as well as silent film can be spliced.

The Cinea has provision for easy attachment to any editing board.

There are two models, practically identical in appearance—one for 16mm. sound and silent film (\$9.50); and the other to handle not only 16 mm. sound and silent, but also 8mm. film, (\$10).

For additional information write American Bolex Co., Inc., 155 East 44th Street, New York City.



Tripod for 8 mm. Movie Cameras

The new Tru-Pan Tripod, (\$18.75) announced by Bell & Howell, is designed especially for 8 mm. movie makers. The hard wood legs are in two sections, and may be adjusted to different lengths. Both pan and tilt may be operated or locked independently. Although this new tripod is designed particularly for 8 mm. camera use, it is said to be strong enough for any Films 16mm. camera.

For further particulars write Bell & Howell Co., 1801 Larchmont Avenue, Chicago, Ill.

New Movie Cameras

THE "IMPERIAL" movie camera is announced by Irwin Corporation, 27-33 West 20th St., New York City.

Features of this new line of cameras include the following: It is of convenient pocket size, weight, 2 1/4 pounds; has convenient carrying strap for camera; has tripod holder attachment; has exposure chart on front of camera; has four variable speeds: Nos. 21 and 23—8, 12, 16 and 24 frames per second; Nos. 22 and 24—16 frames per second only.

The "Imperial" loads in daylight; can switch from color to black and white film at any time as it is not necessary to wait until the entire roll has been exposed.

Prices: No. 24, 4/5 lens, 1 speed, \$22.50; No. 23, 4/5 lens, 4 speeds, \$25.95; No. 22, 3.5 lens, 1 speed, \$29.95; No. 21, 3.5 lens, 4 speeds, \$34.95.



Double-8 Reversible Film

Agfa Twin Eight Hypan (\$2.25 for 25 ft. spool processing included) is a new reversible film especially designed for use in double-8 camera. This new emulsion

is three times faster than Agfa single 8 mm. films and combines fine grain with high speed.

Twin Eight Hypan film provides a balanced pan-chromatic color sensitivity, making it suitable for use in daylight or artificial light. It has wide latitude, which minimizes exposure errors, and brilliant gradation that makes projected movies sparkle with crisp naturalness.

For Amateur Movie Fans

"Movie Fax," a house organ published by Hollywood Studio, South Gate, California, includes the following features: An informative page of suggestions about making better amateur movies; "Questions and Answers" section; "What's New" section; swap column; special offers of merchandise; and monthly prize-winning scenarios. "Movie Fax" is sent free on request.

Feature Release

"WILD INNOCENCE" with Chut, the Kangaroo, is now available. Six reels, 16 mm. film, running time about an hour. It describes an absorbing tale in the Australian wilderness and a portrayal of the strangest of animals. The 16 mm. release is obtainable from Post Pictures Corp., 723 Seventh Avenue, New York City.

Wide Angle Cine Lens Attachment

The Hyper Cinor Attachment acts as a wide angle lens for 8mm. movie cameras. It doubles the lens angle to



increase the area photographed. It includes provision for focusing, and is easily removed.

The Hyper Lens Attachment is supplied in models for the Taylor-Hobson 1/4-inch f2.5 lens used on Filmo 8's, and for the T-H 1-inch f2.7 and B&H Lumax 1-inch lenses for 16mm. Filmos. For prices and further information address Bell & Howell Company, 1801 Larchmont Avenue, Chicago, Illinois.

Closeup Cine Shots

The new Focusing Alignment Gauge (\$7.50) announced by Bell & Howell for use with the Filmo Turret 8, permits the operator to focus exactly, and also



to obtain the exact boundaries of close-up pictures. Since the Critical Focuser (an integral part of the Filmo Turret 8) and the lens in photographing position are exactly parallel, it is only necessary to slide the Focusing Gauge block to the right and revolve the selected lens back into place in order to photograph the picture precisely as focused and framed in the Critical Focuser. Thus a title card, map or any subject may be sharply focused and accurately com-

posed within the film-frame area, and then photographed with complete assurance.

For further description write Bell & Howell Co., 1801 Larchmont Ave., Chicago, Ill.

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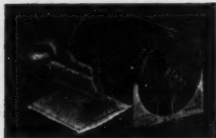
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MINICAM MAGAZINE

22 East 12th Street, Cincinnati, Ohio

Sound Recorder

FILMGRAPH is a compact electro-mechanical device that records sound permanently on film. Any type of film may be used—developed or undeveloped. Filmgraph sound tracks are very fine and 28 of them may be recorded across the width of any standard 16 mm. film.

Filmgraph is equipped with an indestructible sapphire point, which point is used for recording as well as reproducing and never needs to be taken out or changed. Filmgraph acts in a dual capacity; it records and plays back. A simple switch instantly transforms Filmgraph from a recorder into a play-back device.

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Filmgraph Model A operates in conjunction with 16 mm. projectors; Model AA operates in combination with 8 mm. projectors. Model B is self-motored and requires no projector and is designed for recording and play-back in offices, industrial plants, studios, etc.

Filmgraph Model A and Model AA are excellent for making home "talkies" as the sound track can be put on the film while the picture is being taken, giving perfect synchronization, or may be put on the film while the pictures are being shown. Only one sound track is required for a talking picture but if the first sound track is not satisfactory, a second sound track may be added very easily.

To record a program, using Filmgraph, a radio receiver of fairly good quality and a microphone (or amplifier-speaker-combination) are required. Manufactured by Miles Reproduser Co., 812 Broadway, New York City.

Double 8mm. Projector

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For further information write the Excel Movie Products, 4234 Drummond Pl., Chicago, Ill.

Slide-O-Mat

A convenient projection slide is the new DATED SLIDE-O-MAT introduced by G. Gennert, Inc., 20 West 22nd Street, New York City.

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Stainless Steel Thermometer

A new steel Tray Thermometer (45c) added to the line of Chas-United Co. is made of stainless steel, even to the hook used in affixing the thermometer to the developing tray. The thermometer is engraved with a specially prepared acid-alkali-resistant enamel.

Color Photography Department

Equipment and materials for taking color pictures and making color prints by the Champincolor, Dufaycolor, Devin, Curtis, and all of the other processes are now available in the new color photography department at Willoughbys, 110 West 32nd Street, New York City.

Whether the worker wants to take a few color snapshots or make salon or commercial color prints, he can find the materials he needs in this Willoughby department.

Book Reviews

THE CAMERA EYE, by Leo Nejelski. 108 pages, 17 full-page illustrations, 8 diagrams. Knight Publishers, Inc.

More than good equipment and a knowledge of chemistry are needed to produce effective pictures—the blending of good taste with imaginative vision, or what Leo Nejelski calls the “camera eye.”

In this book the reader will find the answer to the questions, where and how to make good pictures, as well as a discussion of the whole photographic process. The author avoids an excess of technical material, giving his reader only the bare essentials and then hastening him on to the fun of photography—finding and taking pictures.

PHOTO-LAB-INDEX, by Henry M. Lester. 288 pp. looseleaf. Morgan and Lester, Publishers. \$3.50.

The need for condensation and unification of the banyan-like growths of photographic data has long been felt both by the amateur and by the professional photographer. Mr. Lester has dug into the problem with notable success in his Photo-Lab-Index, which is a cumulative formulary of standard photographic procedures.

Recognizing the fact that no reference book on a living, growing subject could be complete, the author has adopted a loose leaf form and plans to issue quarterly supplements incorporating all the new procedures, formulas, and data as they are released. These supplements will be available on a subscription basis at \$1 per year.

MODERN PHOTOGRAPHY 1938-39, 110 reproductions including 8 in full color. Studio Publications, Inc. Price, cloth bound, \$3.50; paper, \$2.50.

For the eighth successive year, a selection of a year's best prints are presented.

It is a first class picture book, and the camera student is not forgotten. The technical information about each print is included.

There is an article “Cameras of Today” and a table listing the main types of cameras, their features and prices in Great Britain.

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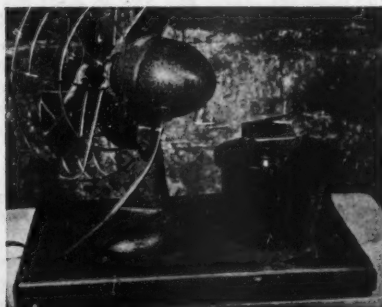
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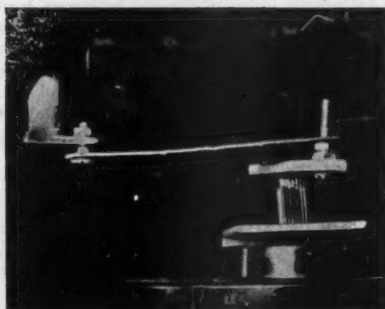
Film Tank Agitator

An efficient agitator for film development can be made from an oscillating electric fan. A rubber stair tread or piece of linoleum may be used to cover the baseboard, which is about 10" x 12". To keep fan and tank from shifting, make a metal bracket under which the developing tank will fit, and fasten on the baseboard near one corner.

Cut a piece of wood or bakelite to about 1 1/2" x 1". Cement one end of this to the hand agitator spindle with Duco cement, and through the other end put a 1/2" bolt (Fig. 3.) The connecting link (Fig. 3) is a brass angle, hammered out flat, which accounts for the two extra holes.



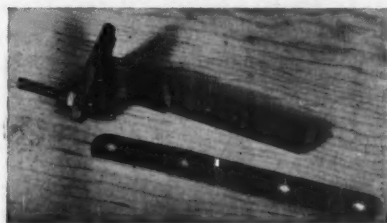
OSCILLATING fan agitates film in developing tank by turning the reel. This is more efficient than hand turning or mechanical shaking methods. Fig. 1



CLOSEUP showing arm from fan to tank handle. Fig. 2

On the fan, disconnect the rigid arm, which makes the fan oscillate, at the crankshaft on the rear of the motor. Fasten one end of the connecting link to the shaft. Replace the set screw at the motor base with a longer one to

lock the motor firmly in one position. This need not be loosened unless the oscillating arm is connected when the fan is used as a fan.



A PIECE of wood or hard rubber is cemented to the film tank agitator rod (above). The connecting link (lower) may be a piece of brass or flattened angle iron. Fig. 3.

To use the mechanism, place the loaded tank on the baseboard under the bracket, put agitator spindle in place through hole in bracket, make sure it engages reel, drop connecting link over bolt on agitator spindle fitting, and turn on current. A little experimenting will show where to place the fan.

Extending Meter Calibrations

With some exposure meters the range of emulsion speeds may be extended. In using the Mini Photoscope where the Scheiner (Photoscope) speeds are given as 14 to 26 it will be noticed that these are laid out on a circle which also includes the exposure speeds. The divisions between the speed numbers and the exposure speeds are equi-distant. If a scratch is made on the meter half way between the "26" speed and the "60-second" exposure indication, the scratch will correspond to an emulsion speed of 29. Newer models have this 29 speed marking. The "60-second" mark can then be used for a speed rating of 32, the "30-second" for 35, the "15-second" for a speed of 38 and so on. When using process, positive and other films slower than 14 Scheiner, the scale can be extended in the other direction.

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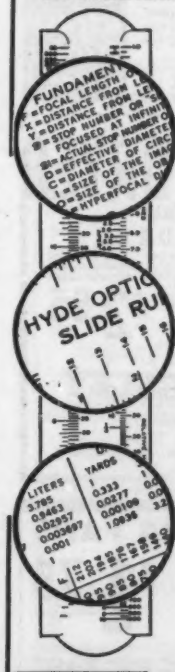
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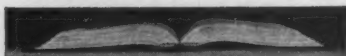


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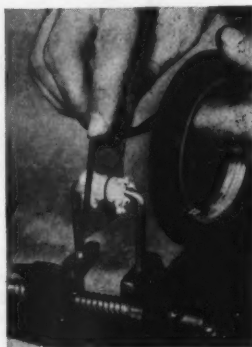
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Binding Transparencies

A jig for holding 2 x 2" glass slides for binding transparencies is easily made by attaching a pair of padded jaws to any bench vise.

This in no way damages the vise for other work. Two 20 - penny nails are bent at right angles 1/2-inch below the heads, and sawed off so that the shanks are 3 inches long. Discs of Chamois leather the size of a half dollar are then tied over the nail heads to protect the glass slides.



Drill holes opposite each other into the jaws of the vise to a depth of 1/2 inch. The sawed-off nails should fit into these holes tightly so that the slides will be held securely. It may be a good idea to drill the holes a trifle small, and fit the nails by careful filing. You could thread the nails and tap the holes to fit, but this is hardly necessary.

—J. D. Brown.

How to Cut Glass

Glass cutting is very simple with an ordinary dime store glass cutter.

Draw a pattern of the glass to be cut on a piece of paper. Place the glass to be cut on the paper pattern and be sure the glass and pattern are on a perfectly flat surface.

Line up the cutter over the first line to be cut and score—being sure to make the first cut a good one. Do not rescore. Complete the other scores necessary to make the pattern.

Place one of the scores over a square edge; scored side up. Take a firm grip on both sides of the score and press down firmly and quickly. Your glass will separate easily. Continue until all scores have been followed. Using this system it is very easy to cut round patterns as well.

Dull the edges of the glass with an ordinary file or emery paper. This will permit handling the glass easily without danger of cutting the hands or scratching negatives.—Lee J. Davis.

Recording Exposure Data

If you hate to fumble around for stray notebooks and thereby neglect to record data after each shot, try this little wrinkle.

On the back of your camera fasten four photo mounting corners spaced to fit a small

card such as is used in index files. Use iron glue or cement. Cut a hole in the card to fit over the snap button of the case. On each side of the card rule off spaces for data for 18 exposures. Make columns for meter, filter, stop and shutter readings.

This record is easy to keep and using both sides, each card furnishes a permanent record of one roll of 36-exposure film.

Darkroom Lamp

A good and easily made safe light for printing may be made from a brown bottle and a "tin-can." Such a lamp is shown in the



photograph. A brown bottle is chosen which will just fit a tin-can. The space between bottle and can may be filled, if necessary, with putty or other material which makes a light-tight joint. No ventilation is necessary.

The bottle may be cut off to have the right length by either of two methods. One is to wrap one turn of

about the bottle at the proper place, and heat it red-hot by passing an electric current through it. When the glass becomes hot, a drop of water placed on the wire will cause the bottle to crack all the way around just beneath the wire. Another way is to bend a piece of heavy iron wire to fit the curvature of the bottle, extending perhaps one-third the way around. The wire is heated red-hot and when moved around the bottle serves to heat the bottle locally, after which the crack is produced just as explained above.

The incandescent bulb merely screws into an ordinary porcelain lamp base which is fixed inside the tin-can with two screws.

Not every brown bottle will serve as a safe light, and the only sure way of picking out a suitable one is to test with bromide paper in the manner usual for testing a safe light, i. e., by making a series of exposures ranging from one to five minutes each, and developing for the normal length of time.

—J. Clyde Cornog.

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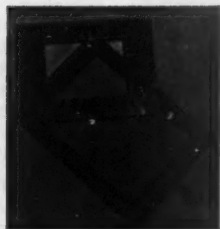
Local reduction of dense portions in negatives can be accomplished by applying alcohol with a camel hair brush or a piece of cotton. Apply the alcohol in succeeding coats until the desired effect is obtained.—William Swallow.



Enlarger Negative Carrier

A negative holder may be made from a plate holder. Cut out the separator between the two sides leaving about a 1/4" margin all around.

For the glass, the emulsion from an old plate may be removed with hot water and the glass loaded in the holder in the same way an unexposed plate would be.



The negative may be sandwiched between this and a second piece of glass,

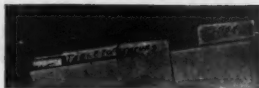
or the method shown in the photo may be used. The latter method eliminates the second piece of glass and therefore makes for fewer dust particles. A piece of brass or heavy aluminum is cut to fit loosely in the holder and a hole cut in the center 1/8" smaller all around than the negative. A metal clip placed on each side of the carrier will hold the mask, with the negative beneath, firmly in place.—Walter Hoag.

Tabs for Magazine References

Regular 3 by 5-inch filing cards are cut into strips 1" wide and each cut in half, thus making 6 tabs from one card. They are pasted to the leaves in the magazine in a staggered fashion. If several issues con-



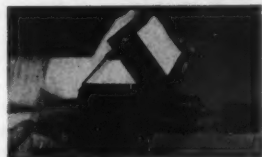
tain information on one subject, cross-references can be made right on the tab.—J. H. Dunnewin.



Negative Viewer

A real pleasure is had in going over a file of negatives if one does not have to hold individual negatives up to a light.

A simple viewer can be made from a dime store 3 by 5-inch cardboard filing case. A razor



blade cuts a neat opening in the top and a piece of opal or ground glass is pasted beneath this opening. Ordinary window glass may

be used by pasting some wax paper under it.

A small round hole is cut in the back of the box, just large enough to accommodate the base of a 15-watt frosted electric bulb. This is screwed into the hole from the inside out and the socket from an electric cord is screwed on the outside. There is no danger from heat with the small bulb. For critical examination, the only other accessory is a good magnifying glass. This viewer also may be used as a good retouching desk.—J. H. Dunnevin.

Telephoto Shutter Speed

When using telephoto lenses, any movement of the camera is greatly magnified. While this slight camera movement might not be serious with lenses of normal focal length, it may be sufficient to spoil the picture when telephoto lenses are employed. Many photographers unconsciously move the camera when pressing the release. In times of stress or hurry, the movement may be very great. First learn to *squeeze* the shutter release instead of punching it. Second, use a rapid shutter speed. For ordinary snapshotting, shoot at 1/50th or faster. With telephotos have the shutter set on 1/200th of a second and do not use a slower speed unless the camera is on a tripod.

Being Set

Opportunities for making good shots often come up when you least expect them so always have your camera ready for a quick exposure. Set the shutter speed at 1/50th and your stop at f16—or whatever the film speed calls for on that particular day for an average exposure. Then if an opportunity comes for a snap-shot, you can make it in a jiffy. You don't always have the chance to look and see what the camera setting is before the opportunity passes. Keep your camera set and you will always be ready for the unexpected.—C. W. Gibbs, A. R. P. S.



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when dried this way, have a sort of semi-gloss finish.—Bernard Kobel.

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To identify the grade and type of photographic paper after it has been withdrawn from the outer wrapper, mark on the black wrapper the grade and type with a white pencil or crayon. This will prevent confusion when using several types.—Ray Kershner.

Rapid Dryer

A ferrotyping machine utilizing the heat from a gas stove or electric hot-plate, will dry prints in from five to seven minutes.

The apparatus is made from a piece of sheet iron cut slightly larger all around than the ferrotyping tins to be used, bent as shown in the



photo, and held in shape by strips of band iron across the bottom. A curtain made of lightweight canvas is attached by coil springs to

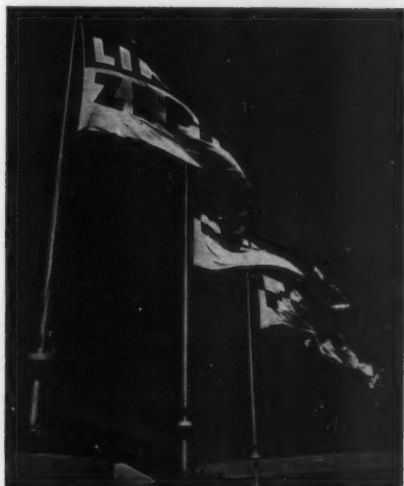
the back of the ferrotyper and small clips are fastened to the front to hold it in place when stretched over the top of the machine.

In use, the prints are rolled onto the tin in the usual manner and placed on the ferrotyper with the curtain stretched over it. The machine is then placed on the stove or hot-plate and the gas turned as low as possible.

Matte prints are squeezed face up. Only chromium tins should be used.—*Walter Hoag.*

Photo Wins Ford V-8

A radio script writer who broadcasts a program about his year-and-a-half-old hobby—photography—was awarded a Ford V-8 De-Luxe Fordor Sedan as first prize in the May period of the Ford Exposition Photographic Contest. He is James Harvey Hebb of 2124 Pine Street, Philadelphia, Pa.



The prize winning picture (reproduced above) shows the loading platform on "The Road of Tomorrow" at the Ford Exposition with Ford, Mercury and Lincoln-Zephyr flags flying proudly above it.

Mr. Hebb used a Rolleiflex camera with a Zeiss Tessar 7cm., $f/3.5$ lens. He used a dark yellow "G" filter. The exposure was made at $1/100$ of a second at $f/8$ at noon. The film used was Agfa Super Plenachrome, developed 20 minutes at 70 degrees in DK 20. The paper used was Agfa Brovira glossy.

Second prize of \$200 in cash was won by Gustav Anderson of Amityville, N. Y., while third prize of \$100 went to L. Nash, 679 Ocean Parkway, Brooklyn, N. Y. Louis Field of 37-63 64th Street, Woodside, Long Island, won fourth prize of \$50, while John G. Coffey of 1818 Ashdale Street, Philadelphia, Pa., was awarded fifth prize of \$25. In addition, twenty-five prizes of \$10 each were awarded, as well as 100 Certificates of Merit.

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Photo FIRSTS

By DR. OTTO BETTMANN

WE won't claim that there was a minicam in Eden, but an erudite German writer claims that Noah started aerial photography.



DR. NEUBRONNER'S camera-equipped pigeon. The camera is larger and clumsier than the modern Zeiss camera now being used by the German army for obtaining pictures of enemy troop movements. (See MINICAM, July, page 23).

Didn't the master of the Ark send out a pigeon to reconnoitre after the great flood? And didn't the bird come back bearing an olive branch, proof, that the waters had receded? From then on it was only a few steps to the day when birds would carry cameras to enhance their ability as aerial photographers.

A mid-nineteenth century apothecary in a tiny German village once provided distant doctors with carrier pigeons. These doctors tied their prescriptions to the birds which then flew to Dr. Neubronner's drugstore. The clever apothecary had taken his hint from newspaper reports that American doctors on their daily rounds with horse and buggy usually left a carrier pigeon at the bedside of the patient, so the bird could later be released with news of the patient's condition.

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One day one of Dr. Neubronner's birds did not arrive on time. When the pigeon returned after an absence of four weeks, the apothecary was curious about the bird's whereabouts. To record its flight in pictures, he constructed a special camera, light enough to be carried by the bird. The winged photographer returned with a snapshot that had been successfully exposed—the first aerial photograph in history—and that more than half a century ago!

Moon and Aurora Borealis Light Unique Photos

By ORMAL I. SPRUNGMAN



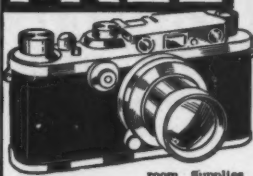
C. F. CANN, Fairbanks, Alaska photographer, made this unique photograph of the northern lights with a minicam on a September evening up north. Exposure: 7/25, 10 seconds, on supersensitive pan film. Fig. 1.



THIS MINICAM snapshot of Mt. Rainier at night was made with an f2 lens wide open at 1/15th second. Note lighted movie screen in center foreground (see story). Fig. 2.

MOONLIGHT photography is no longer a mystery, for any amateur with a reasonably good lens and a little time on his hands can sit tight during a time exposure. But *snapshotting* a moonlight scene, at a fraction of a second, or actually photographing the northern lights themselves is something else again.

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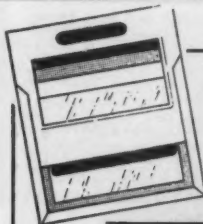
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The night view of Mount Rainier, Fig. 2, was taken with a minicam by the light of the moon during a summer evening. Exposure: $f/2$, $1/15$ second. The two white spots at the left are electric lights, which did not help to illuminate the photograph. While this picture was being made, a crowd of campers was watching an outdoor screening of a Park naturalist's films, and the lighted movie screen may be seen in the center foreground, displaying a view of Mount Rainier itself!

Still more striking, perhaps, is a minicam view of the aurora borealis in action up in the snow country, captured by C. F. Cann, photographer of Fairbanks, Alaska. Because of the rapid movement of the northern lights across the sky, a snapshot exposure does not produce satisfactory results, so Mr. Cann used a time exposure and a fast lens for better rendition and greater spread of lights. In Fig. 1, an exposure of $f/2.5$, 10 seconds, was made at 10 o'clock of a September evening. Both moonlight and northern light pictures were recorded on supersensitive panchromatic film.

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For copying small objects such as postage stamps an enlarger may be successfully used. The use of camera extension tubes was described in March, 1939, MINICAM, page 54, as was the use of supplementary lenses, magnifying glasses, spectacles, etc., for copying. (August, 1938, MINICAM.)

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FILMING "The Wizard of Oz," a fantasy, in technicolor taught camera and color tricks galore to the M-G-M photographers. Fig. 1



THE CAMERA moves down from an overhead view of the Munchkin city to a closeup of Dorothy and the Good Witch. Blue stone gave the necessary color to the water of the pool. Fig. 2

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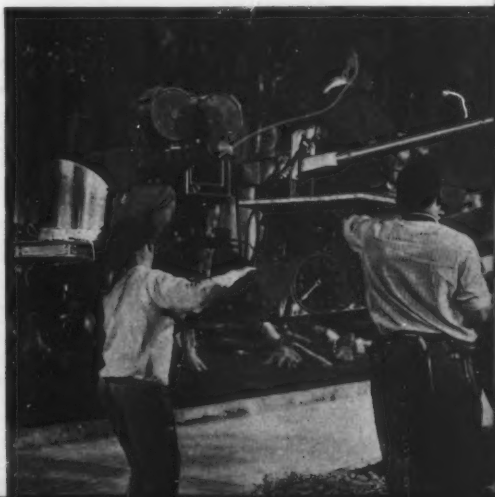
By **JOHN ARNOLD, A. S. C.**
CAMERA CHIEF, M-G-M

THE amateur photographer, with his roll of Kodachrome, is the envy of all Hollywood cameramen, for he can adjust his camera to existing conditions. In the motion-picture studios, conditions must be adjusted to the camera. Light or color cannot be compensated for with stops or shutterspeeds. The camera must steadily click off each frame or single picture on the strip of film at the rate of 24 frames a second at a lens opening of $f/2$.

"Holding down" colors so that they appear as they do in Nature was found more satisfactory than using an over-abundance of bright hues. Many of the sets and costumes, therefore, became monochromatic. A field of poppies, for example, was a mass of red ranging from light pink to

deep rose, further accented by lights of varying intensity on different sections. Only small, brilliant color accents were used such as the ruby slippers worn by the heroine, the green face of the Wicked Witch, or the brilliantly colored faces of the fantastic people in the Emerald City.

TWO numbered disks on the camera crane of the Technicolor camera kept track of vertical and horizontal movements. Every position in which the camera stops is recorded, as "vertical 8, horizontal 10," so that the position can be exactly duplicated if a retake becomes necessary. Fig. 3





THE CAMERA is kept on the move following characters, wandering about the magic land and taking in the sights. Here the camera moves down to center on Judy Garland. Fig. 4



THE LIGHTING of the black garbed witch offered difficulties which the cameraman overcame by directing extra lights on her and photographing her against a gray background. Fig. 5

Every light adjustment was governed by the "ju-ju", a Technicolor light meter calibrated in foot-candles which operates like the conventional Weston meter. Light is tested at the spot where the camera is focused.

Technicolor cameras and equipment are owned by the Technicolor company, handled by their own men and nightly taken from the studio to the Technicolor plant to be checked and adjusted.

The camera for the "Wizard of Oz" was operated on a special crane. For low angles, Metro-Goldwyn-Mayer technicians developed an underslung mount which suspended the camera below the crane, bringing the lens to within a few inches of the stage floor.

In the Technicolor process, the camera makes three negatives simultaneously on ordinary black and white panchromatic film. These negatives are developed to equal contrast, projected through the celluloid of a specially prepared stock, developed and processed. The result is a positive relief in hardened gelatin.

These reliefs are used as matrices which absorb dye and print onto transparent gelatin strips. In other words, the printing process is fundamentally the same as letterpress color printing with the celluloid reliefs taking the place of the zinc or copper cuts used by the printer. The

matrices are used over and over again for as many copies as desired of the completed color film.

A highlight on a face can, in black and white, be merely the bare celluloid, and the result will be satisfactory. In a color print, however, if the flesh tint were bleached out, the face looks blotchy. Consequently, continual care in the even lighting of faces and avoidance of "hot spots" is necessary.

The limitations of color photography called for ingenuity in making the fantastic scenes of the Wizard of Oz. The set for the scene in the land of the Munchkins had great cellophane hollyhocks which caused halation when light was reflected into the camera. The studio photographer was kept busy watching for "hot spots" while lights and sometimes the hollyhocks themselves were tilted or adjusted. Each camera set-up saw the same process gone through.

The lighting of the entire picture is in high key, so the modeling of faces was accomplished by means of shadows rather than by the use of spotlights. Small black shields or "nigger boards" were interposed at proper positions between the subjects and the lights to accomplish this.

"The Wizard of Oz" involved more technical tricks than camera tricks. The magic manifestations called for by the

script could in only a few cases be worked out by trick photography. In Technicolor, manipulating three films, double exposure and similar tricks become too complicated. Most of the tricks were worked out and photographed as stage illusions.

In black and white photography, for example, the image of home and relatives which the heroine sees in the crystal ball would have been double-exposed into the globe. Technicolor made this method too complicated, so the "visions" were filmed first. Prints were projected onto a mirror which reflected the picture into the ball. With the images moving inside the globe, the entire scene was photographed in a single regular exposure.

Color rendering was a constant problem. Blue objects when illuminated with a red light have a purplish tinge. Blue objects lighted with a yellow light have a greenish cast. Lighting for color shots takes ingenuity. Arc lamps were used with straw-colored filters. These filters cut down the blue rays, preventing blue or green highlights.

In color photography, it is just as important for the cameraman to determine directions from which light shall not come as it is to determine from where it should

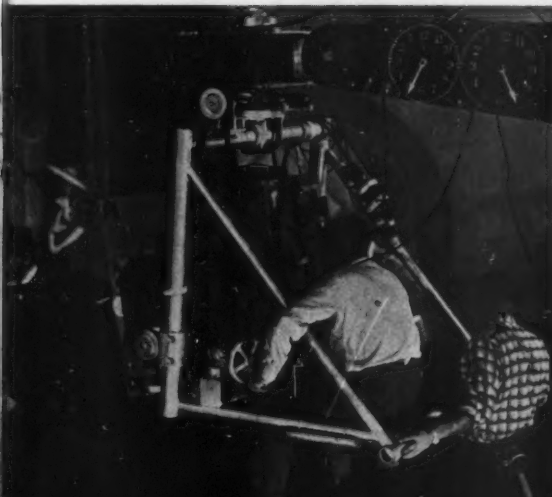
come. Flat lighting may produce a pleasing effect, but it lacks depth.

The photography of each character presented a problem. The Wicked Witch wore black while her hands and face were tinted bright green. Her black costume was brilliantly lighted and she was kept before a dark gray background to avoid too great contrasts. The shining metallic costume of Jack Haley, the Tin Woodman, photographed too blue. All lights played on him had to be carefully filtered. Judy Garland's slippers, with their red sequins reflected sparks of light, so the lighting was done from an angle that would not permit its projection into the camera. The brilliant head-dress of the Good Witch presented a similar problem. The Wizard's accentuated make-up gave shiny cheek bones to battle with. All these problems were solved by adjusting the position of the lights.

In photographing still color pictures such as the Kodachrome from which this month's cover was reproduced, cameraman George Hommell encountered many problems. Flat lighting was used as often as possible to avoid shadows. Technicolor lighting is always flatter than that used for black and white films. The same light-

(Page 113, please)

THE UNDERSLUNG mount designed by John Arnold made possible odd angles from the floor. It can be moved up, down, forward, or backward. The two indicators record its position. Fig. 6



THE "JU-JU" or Technicolor light meter held near Judy Garland's face measures the foot candle power of the light. It is especially sensitive and is used before every "take." Fig. 7





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A highlight on a face can, in black and white, be merely the bare celluloid, and the result will be satisfactory. In a color print, however, if the flesh tint were bleached out, the face looks blotchy. Consequently, continual care in the even lighting of faces and avoidance of "hot spots" is necessary.

The limitations of color photography called for ingenuity in making the fantastic scenes of the Wizard of Oz. The set for the scene in the land of the Munchkins had great cellophane hollyhocks which caused halation when light was reflected into the camera. The studio photographer was kept busy watching for "hot spots" while lights and sometimes the hollyhocks themselves were tilted or adjusted. Each camera set-up saw the same process gone through.

The lighting of the entire picture is in high key, so the modeling of faces was accomplished by means of shadows rather than by the use of spotlights. Small black shields or "nigger boards" were interposed at proper positions between the subjects and the lights to accomplish this.

"The Wizard of Oz" involved more technical tricks than camera tricks. The magic manifestations called for by the

script could in only a few cases be worked out by trick photography. In Technicolor, manipulating three films, double exposure and similar tricks become too complicated. Most of the tricks were worked out and photographed as stage illusions.

In black and white photography, for example, the image of home and relatives which the heroine sees in the crystal ball would have been double-exposed into the globe. Technicolor made this method too complicated, so the "visions" were filmed first. Prints were projected onto a mirror which reflected the picture into the ball. With the images moving inside the globe, the entire scene was photographed in a single regular exposure.

Color rendering was a constant problem. Blue objects when illuminated with a red light have a purplish tinge. Blue objects lighted with a yellow light have a greenish cast. Lighting for color shots takes ingenuity. Arc lamps were used with straw-colored filters. These filters cut down the blue rays, preventing blue or green highlights.

In color photography, it is just as important for the cameraman to determine directions from which light shall not come as it is to determine from where it should

come. Flat lighting may produce a pleasing effect, but it lacks depth.

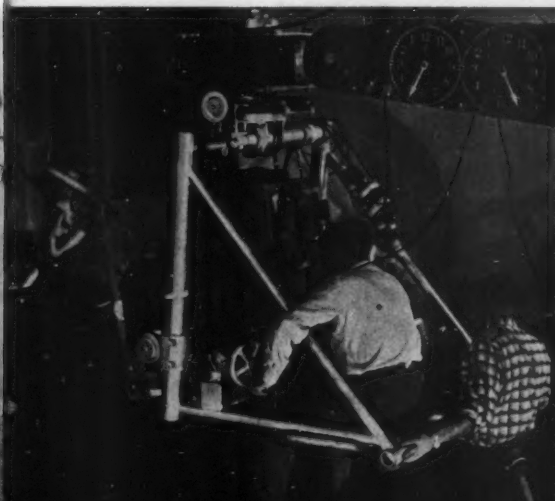
The photography of each character presented a problem. The Wicked Witch wore black while her hands and face were tinted bright green. Her black costume was brilliantly lighted and she was kept before a dark gray background to avoid too great contrasts. The shining metallic costume of Jack Haley, the Tin Woodman, photographed too blue. All lights played on him had to be carefully filtered. Judy Garland's slippers, with their red sequins reflected sparks of light, so the lighting was done from an angle that would not permit its projection into the camera. The brilliant head-dress of the Good Witch presented a similar problem. The Wizard's accentuated make-up gave shiny cheek bones to battle with. All these problems were solved by adjusting the position of the lights.

In photographing still color pictures such as the Kodachrome from which this month's cover was reproduced, cameraman George Hommel encountered many problems. Flat lighting was used as often as possible to avoid shadows. Technicolor lighting is always flatter than that used for black and white films. The same light-

(Page 113, please)

THE UNDERSLUNG mount designed by John Arnold made possible odd angles from the floor. It can be moved up, down, forward, or backward. The two indicators record its position. Fig. 6

THE "JU-JU" or Technicolor light meter held near Judy Garland's face measures the foot candle power of the light. It is especially sensitive and is used before every "take." Fig. 7



PAPER CLIP EDITING

By WILLIAM L. MORGAN

Illustrations by the Author

AFTER the first rough editing of a film a second or "finishing" editing is usually necessary to smooth out action and adjust the length of sequences. A valuable aid in this final operation is the common paper clip. Open as many clips to an "S" shape as there are scenes or parts to the picture and hook them over staples or small screw-eyes in the edge of the editing table or board before beginning work.

As short lengths of film are removed, hook the end sprocket hole over the free hook of the proper paper clip. Catch the loose ends of the film in a clean, newspaper-lined waste-basket or box to keep them off the floor. Lengths up to eight feet can be handled easily in this manner. Longer pieces should be rolled separately and labeled.

Handle the film carefully by the edges, letting it fall loosely into the box or waste-basket. If it is necessary to interrupt the editing fasten the pieces together with a rubber band, remove the clip, and roll the film up, jogging the edges together. The film can be unrolled and spread out fan-wise near the fastened end for inspection. In this way a particular scene can be located easily.

This method can also be used in doing the first rough editing if most of the scenes are in short lengths. Use several hooks, roughly separating the scenes into categories such as "beginning," "middle," and "end." Hook the start of each scene on the clip, i.e., the picture should be upside-down as it hangs from the hook.

When all the film is on the hooks, find the opening scene and remove it, either by slipping it off or jerking it free, tearing through the sprocket hole. Wind the opening scene on the empty reel, splice the next scene to it, etc.

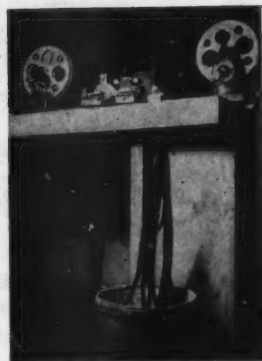
While editing films in which a number of people appear, the process is often simplified by using a hook for the pictures of each person.

When it is time for Mary to appear in the picture, the editor need refer only to the hook on which frames showing her are hung. Hooks may be used in this way for as many subdivisions as necessary.



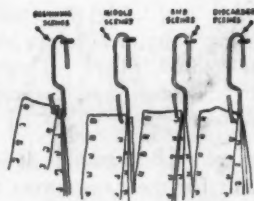
PLACE the clips far enough apart so that strips of film on one clip will not touch those on another.

Fig. 1



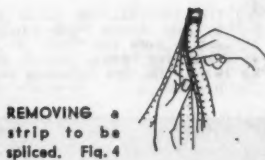
PROTECT the ends of the film by allowing them to drop into a clean, newspaper-lined basket or box.

Fig. 2



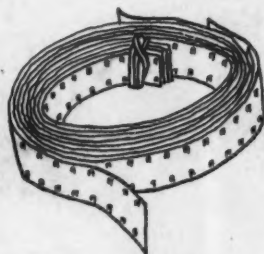
A FEW general categories speed up preliminary editing.

Fig. 3



REMOVING a strip to be spliced.

Fig. 4



STRIPS of film fastened with a rubber band and rolled up to await splicing.

Fig. 5

Hollywood Color Problems

(Continued from page 111)

ing is particularly adaptable to color stills.

When filming people, deep shadows were avoided. Nose shadows are especially dangerous, as are strong highlights which tend to go white or transparent on the film.

Dufaycolor gives good results if care is taken to allow for the red-sensitivity in this film. In general, Dufaycolor gave best results in scenic details, while Kodachrome lent itself better to portraiture under stage lighting. The same was true in portraiture under photoflood lamps.

Shooting the Cover

THE portrait of Ray Bolger as The Scarecrow in "The Wizard of Oz", the cover page of this issue, was made by Eric Carpenter, one of Metro-Goldwyn-Mayer's portrait photographers. It was



filmed in a gallery with artificial light, which is used exclusively in studio portraiture. Incandescent lights are used, globes of high wattage being more perma-

nent than photoflood lamps.

Kodachrome cut film was used, Type B and a 12-inch Goerz Dagor lens, four feet from the subject. Bulb exposure of about one-third of a second was made at f/16.

Mr. Bolger was lighted by four "broads," flat reflectors containing two 2000 watt globes in each.



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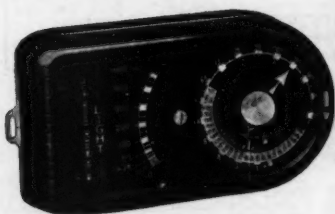
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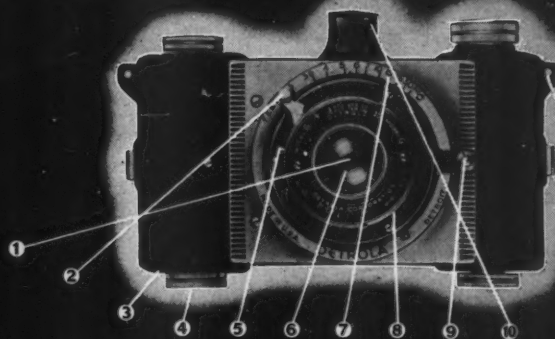
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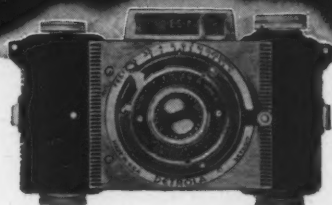
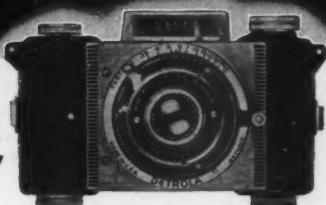
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